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1983 SURVEY OF THE CHECK COLLECTION SYSTEM

by

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Bank Administration Institute

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CONTENTS

LIST OF FIGURES vii

LIST OF TABLES xi

SURVEY HISTORY 1

1983 SURVEY RESPONDENTS 2

1983 SURVEY HIGHLIGHTS 3

THE MEASURES OF SYSTEM PERFORMANCE 4
- Reader/Sorter Reject Rates 5
- Transit Returns 11
- Free and Lost Items 14
- Missent, Miscoded, and Listing Error Items 15
- Exception and Return Items 16
- A Dollar Analysis of Return and Exception Items 18
- Outstanding Exception Items 18
- A Comparison of Balancing Policy and Experience 24
- Transit Holdover 24

BANK LABOR PRODUCTIVITY MEASUREMENT 27
- Labor Intensiveness 28
- Labor Distribution 30
- Data Control - Balancing and Correction 30
- Encoding Operations 31
- Check Receiving Operations 32
- Reader/Sorter Operations 33
- Cash Letter Make-Up and Microfilming 34
- On-Us Processing - Labor Productivity 36
- Bulk Filing Labor Productivity 36
- Exception and Return Item Processing 38
- Reject Processing Productivity 40
- Labor Productivity Summary 42

PERFORMANCE MEASUREMENT STATISTICS 43
- Reject Reentry 43
- Automated Reject Processing 45
- Miscellaneous Statistics 47

CHECK TRUNCATION AND ELECTRONIC CHECK PRESENTMENT 51

APPENDICES

Appendix A: 1983 Survey Questionnaire 53

Appendix B: 1983 Survey Tables 1 through 62 69

Appendix C: 1983 Banker Comments 135

FIGURES

1	Participating Banks	2
2	Reject Rate	5
3	Distribution of Reject Rate	6
4	Types of Rejects	7
5	Transit Number Rejects	8
6	Account Number Rejects	8
7	Dollar Amount Rejects	9
8	Serial Number Rejects	9
9	Trancode Rejects	10
10	Other Rejects	10
11	Transit Returns (Rate per 100,000 Items Sent)	11
12	Distribution of Transit Return Rate	12
13	Average Dollar Value of Transit Return Item	12
14	Distribution of Transit Return Dollars	13
15	Free and Lost Items Discovered (Rate per 100,000 Items Received)	14
16	Exceptions, Returns, and Rejects to Total Items Processed	17
17	Distribution of Exceptions, Returns, and Reject Rate	17
18	Distribution of Exception Items Outstanding (Percent of Dollars)	18
19	Distribution of Exception Items Outstanding (Percent of Items)	19
20	Percent of Outstanding Exception Items 1 Month Outstanding	21
21	Percent of Outstanding Exception Items 1 - 2 Months Outstanding	21
22	Percent of Outstanding Exception Items Over 2 Months Outstanding	22

23	Percent of Outstanding Exception Items 1 Month Outstanding	22
24	Percent of Outstanding Exception Items 1 - 2 Months Outstanding	23
25	Percent of Outstanding Exception Items Over 2 Months Old	23
26	Transit Holdover Rate	25
27	Average Dollar Value of Holdover Item	25
28	Overall Labor Productivity	28
29	Distribution of Overall Labor Productivity	28
30	Distribution of Overall Labor Productivity by Tasks	30
31	Encoding Labor Productivity	31
32	Check Receiving Productivity (Average)	32
33	Check Receiving Productivity (Median)	32
34	Reader/Sorter Labor Productivity	33
35	Distribution of Reader/Sorter Productivity	34
36	Microfilming Labor Productivity	35
37	Bulk Filing Labor Productivity	36
38	Distribution of Bulk Filing Productivity	37
39	Exception and Return Item Productivity	38
40	Return Item Productivity	39
41	Exception Item Productivity	39
42	Reject Processing Productivity	40
43	Distribution of Reject Processing Productivity	41
44	Reject Rate (After High-Speed Reject Reentry)	43
45	Reject Reentry Productivity	44
46	Distribution of Reject Reentry Productivity	44
47	Automated Reject Processing	45

48	Manual Reject Processing	46
49	Distribution of Automated Reject Processing Rate	46
50	Percent of Incoming Items Encoded	47
51	Supervisory Time to Clerical Man-Hours (All Functions)	48
52	Supervisory Time to Clerical Man-Hours (Exception Item Processing)	48
53	Supervisory Time to Clerical Man-Hours (Microfilming)	49
54	Supervisory Time to Clerical Man-Hours (Return Items)	49
55	Supervisory Time to Clerical Man-Hours (Encoding)	50
56	Supervisory Time to Clerical Man-Hours (Cash Letter Make-Up)	50
57	Check Safekeeping at Payor Bank	51
58	Electronic Check Presentment	52

TABLES

1	Survey Respondents by Geographic Area	70
2.	Percent of Rejects on Reader/Sorter Equipment by Area	71
3.	Distribution of the Reject Rate	72
4.	Percent of First-Pass Rejects by Type and by Area	73
5.	Transit Returns by Area	75
6.	Distribution of the Transit Return Rate	76
7.	Transit Return Dollar Value by Rate of Transit Returns	77
8.	Free and Lost Items Discovered by Area	78
9.	Free Items Discovered by Area	79
10.	Lost Items Discovered by Area	80
11.	Distribution of the Free and Lost Item Rate	81
12.	Missent, Miscoded, and Listing Error Items Discovered by Area	82
13.	Missent Items Discovered by Area	83
14.	Miscoded Items Discovered by Area	84
15.	Listing Error Items Discovered by Area	85
16.	Distribution of Missent, Miscoded, and Listing Error Items Rate	86
17.	Exception and Return Items Discovered by Area	87
18.	Distribution of the Exception and Return Items Rate	88
19.	Percent of Exceptions, Returns, and Rejects to the Number of Items Processed	89
20.	Distribution of Exceptions, Returns, and Reject Rate	90
21.	Return and Exception Item Dollar Analysis by Area	91
22.	Age Distribution of Outstanding Exception Items	92
23.	Age Distribution of Outstanding Exception Items by the Microfilming Method	94
24.	A Comparison of Balancing Policy and Experience	96

25. Transit Holdover by Area 97

26. Distribution of the Transit Holdover Rate 98

27. Overall Labor Productivity 99

28. Overall Labor Productivity by Area 100

29. Distribution of Labor by Overall Labor Productivity 101

30. Balancing and Correction Labor Productivity 102

31. Encoding Labor Productivity 103

32. Encoding Labor Productivity for the Single-Pocket Machine 104

33. Encoding Labor Productivity for the Multipocket Machine 105

34. Items Encoded per Man-Hour by Percent of Pre-encoded Items 106

35. Check Receiving Productivity 107

36. Reader/Sorter Labor Productivity 108

37. Cash Letter Make-Up and Microfilming Labor Productivity 109

38. Cash Letter Make-Up Labor Productivity 110

39. Microfilming Labor Productivity 111

40. On-Us Processing Labor Productivity 112

41. Percent of On-Us Items Received and On-Us Processing Labor Productivity 113

42. Bulk Filing Labor Productivity 114

43. Exception and Return Item Processing 115

44. Return Item Productivity 116

45. Exception and Return Item Productivity by Rate Discovered 117

46. Exception Item Productivity 118

47. Reject Processing Productivity by Area 119

48. Reject Processing Productivity 120

49. Reject Rate After Reader/Sorter High-Speed Reject Reentry by Area 171

50. Distribution of the Reject Rate After High-Speed Reject Reentry 122

51. Average Number of Rejects Reentered from the First-Pass by Area 123

52. Average Number of Rejects Reentered from Subsequent Passes by Area 124

53. Reject Reentry Productivity by Area 125

54. Reject Reentry Productivity 126

55. Automated Reject Processing 127

56. Percent of Automated Reject Processing by Area 128

57. Distribution of the Automated Reject Processing Rate 129

58. Percent of Incoming Items Encoded 130

59. Percent of Supervisory Time to Clerical Man-Hours 131

60. Percent of On-Us Items 132

61. Percent of Payable-Through Drafts 133

62. Forms of Check Truncation 134

SURVEY HISTORY

Banking's check collection system continues as our nation's primary payment system for handling transaction volume. This system, while using relatively specialized check handling equipment, is still labor intensive in many of its related sub-operations. Although the interbank check exchange is often called the check collection system, it is, in fact, a loosely organized coordinated system. The procedures for control, crediting, security, and sorting are partially controlled by the Federal Reserve System and the Uniform Commercial Code and partially based on agreements between banks through correspondent banking relationships or clearing house arrangements.

Differences in competitive levels, as well as other factors, have caused significant differences in the resources, the productive capacity, and the quality of the various check processing operations in the commercial banking industry. Since each bank is responsible to its management for its own check processing operation, there is no central control responsible for total system performance. Yet, each bank would suffer if the check exchange process were to falter, because the entire system is based upon total cooperation and strict adherence to procedure by the participants.

Since overall system performance varies over time due to changes in regulation, check volume, the labor market, technological development of systems and equipment, and transportation requirements, up-to-date information is necessary to enable each bank to compare its experiences with its peers.

In 1970, Arthur D. Little, Inc. (ADL), under the auspices of the Operations and Technology Task Force of the Monetary and Payments System (MAPS) of the American Bankers Association, collected and published data relative to the performance of banking's check collection system.[1] The data were used as a basis for evaluating the adequacy of the check collection system from a comparison with similar data in future years. Therefore, ADL recommended a periodic collection of check volume data. The Atlanta Federal Reserve Bank Check Study, a project co-sponsored by ABA, BAI, and the Federal Reserve System, represents follow-up research on the nation's check processing volume, as it existed when the data were collected in June, 1979.

Meanwhile, Bank Administration Institute has continued to conduct annual performance measurement surveys of the nation's check collection system. Since 1971, an annual survey has been conducted to collect data that would provide bankers with a measure of industry system fails and a general set of measures for their own check processing operation. The results of each survey also were published by the Institute.

This report, the thirteenth in BAI's continuing program of monitoring the performance of banking's check collection system, analyzes the system's performance for the years 1979 through 1983. Survey data for 1971 through 1978 may be found in previous reports.

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[1] The Outlook for the Nation's Check Payment System: 1970-1980. Arthur D. Little, Inc. Cambridge, Massachusetts, December 1970.

1983 SURVEY RESPONDENTS

In October, 1983, 230 commercial banks received the Institute's 1983 Check Collection Performance Measurement Survey questionnaire. Several banks that had been unable to participate in previous years were included in the survey distribution for 1983, while a few contributing institutions from previous years were unable to provide data this year. Participating banks collected data for the week of November 14-19, 1983.

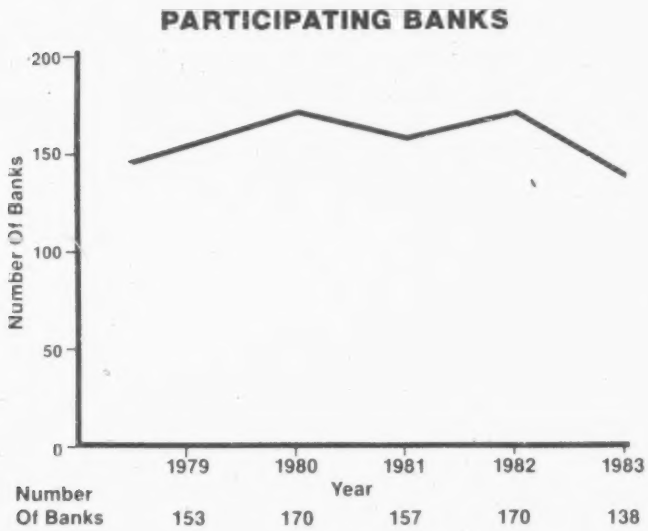
The total number of survey respondents is shown in Figure 1. The slight drop in participating banks was due to merger activity and the implementation of new computer systems. The latter prevented some banks from providing the level of detail needed to complete the survey.

Of the 138 survey respondents in 1983, 119 participated in the 1982 survey, thus providing a solid basis of continuity.

The survey respondents were from all 12 Federal Reserve Districts, representing 90% of the top 10 banks and 74% of the 50 largest banks in the United States. This respondent base is consistent with prior surveys.

The 1983 data represent 503 million checks processed, including 273 million transit checks and 230 million on-us items. According to the latest available information, each check is processed by an average of 2.4 financial institutions. These data were analyzed to determine overall collection performance related to past measurements and manpower utilization by check processing tasks.

Figure 1



1983 SURVEY HIGHLIGHTS

Increased competition from the Federal Reserve and other institutions has forced banks to examine the efficiency of their check processing operations. Banks are managing this traditionally "back room" operation as a business, emphasizing strategic planning, cost accounting, and innovative marketing strategies. The result has been a dramatic improvement in payments productivity.

The survey revealed that encoding checks continued to require the largest percentage of total man-hours of all check processing-related activities. Twenty-eight percent of total man-hours was devoted to encoding in 1983. Only 5 percent of total man-hours is required to actually process the checks through reader-sorter equipment.

The processing of exception items is highly labor intensive. The supervisory time devoted to this activity is indicative of management's concern to control labor costs associated with check processing operations.

Other Survey Findings:

1. The average reject rate remained at 1.5% in 1983. Results also showed that 65% of the banks surveyed had reject rates at or below the national average.

2. Transit holdover rate declined to 1.2% from 1.6% in 1982. However, the average dollar value of a transit holdover increased to $2,129 from the lowest average dollar value of $408 in 1982.

3. Transit return items decreased to 811 items (per 100,000 transit items sent) from 936 items in 1982.

4. Return item productivity decreased to 54 return items processed per man-hour, down from an average of 56 items per man-hour in 1982.

5. The average number of checks processed by reader/sorter equipment decreased to 15,500 items per man-hour, down from 15,700 items in 1982. The survey indicated that 25% of the banks had productivity in excess of 40,000 items per man-hour.

6. Overall labor productivity rose to an average of 788 items per man-hour, a 14% increase from 693 items in 1982.

7. Check safekeeping and electronic presentment, though still minor aspect of overall check processing activity, showed mixed improvement over 1982 levels. The total number of checks held in safekeeping rose to 3.3 million items, down from 4.9 million items in 1982. The total number of checks presented for collection by electronic means increased to 319,000 items, up from 52,000 in 1982.

THE MEASURES OF SYSTEM PERFORMANCE

The primary purpose of the BAI survey is to monitor the industry's check collection system performance. The system's performance can be measured in several ways: cost, speed, or the frequency of error. Although there may be many different ideas concerning what constitutes a system failure or an error, the survey and its succeeding analysis considered the following items to be representative of defects in the system's operation:

1. Reject rates.
2. Transit returns.
3. Free or lost items.
4. Missent, miscoded, and listing errors.
5. Transit holdovers.

Because banks use various definitions and data collection methods, the data presented on system failures have validity only when compared with data collected in the same manner.

Only minor modifications were made in the 1983 survey questionnaire. These changes did not appear to affect the collected data and were comparable to the previous survey data. If the responding banks collected the data in the same manner, the 1983 survey results will identify the changes that have occurred in the past year. All performance analyses for each subject are presented together.

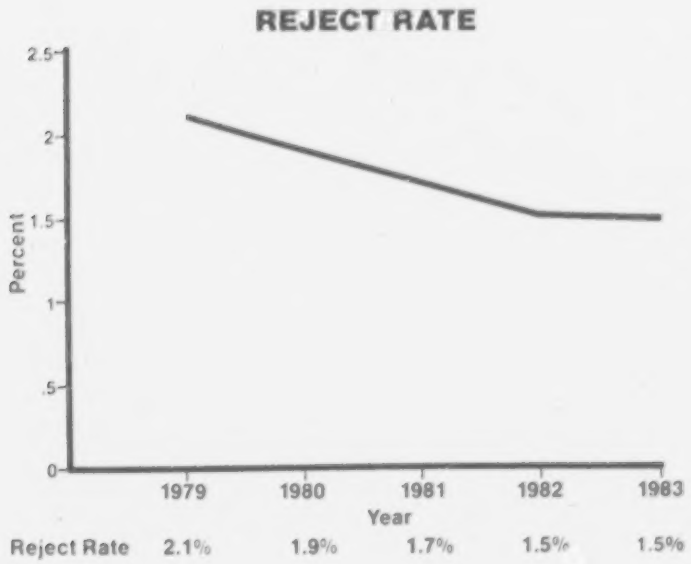
The formulas used in the calculation for each table are given to assist bankers in making their own comparisons. Several respondents could not answer every question in the survey because of the internal systems in their banks. Consequently, only those banks that furnished valid answers to all questions pertaining to a given formula were considered in the calculations, which accounts for the varying number of respondents in the different tables.

Reader/Sorter Reject Rates

Definition: Percentage of items rejected for any reason by a MICR reader-sorter.

As shown in Figure 2, the average reject rate was 1.5% in 1983, the same as in 1982.

Figure 2



All of the geographic areas except for New York and Detroit showed a decrease in their respective reject rates. The areas are ranked by reject rate as follows:

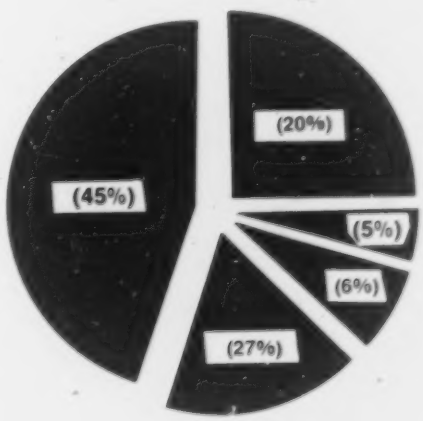
Area	Rate
Houston	1.1%
Minneapolis/St. Paul	1.1%
San Francisco	1.1%
Denver	1.2%
St. Louis	1.2%
Pittsburgh	1.3%
Washington D.C.	1.3%
Boston	1.4%
Chicago	1.4%
Atlanta	1.5%
Cleveland	1.5%
Dallas	1.5%
Los Angeles	1.5%
Detroit	1.6%
Philadelphia	1.7%
New York	2.1%

Historical reject rates of each geographic area are shown in Table 2 of Appendix B.

An analysis of the reject rate indicates that 65% of the banks surveyed have reject rates at or below the national level as shown in Figure 3. An analysis, however, shows that 11% of the banks still have reject rates in excess of 2.0%.

Figure 3

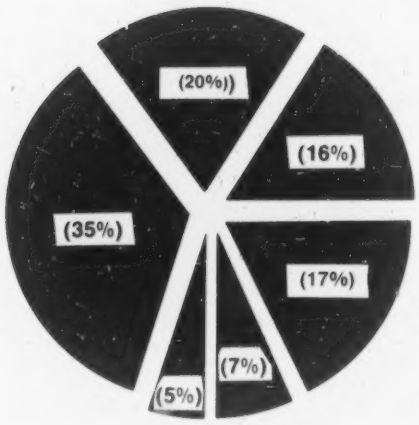
DISTRIBUTION OF REJECT RATE



Reject Rate	
0% - 1.0%	(20%)
1.0% - 1.5%	(45%)
1.5% - 2.0%	(24%)
2.0% - 2.5%	(6%)
Over 2.5%	(5%)

Figure 4

TYPES OF REJECTS



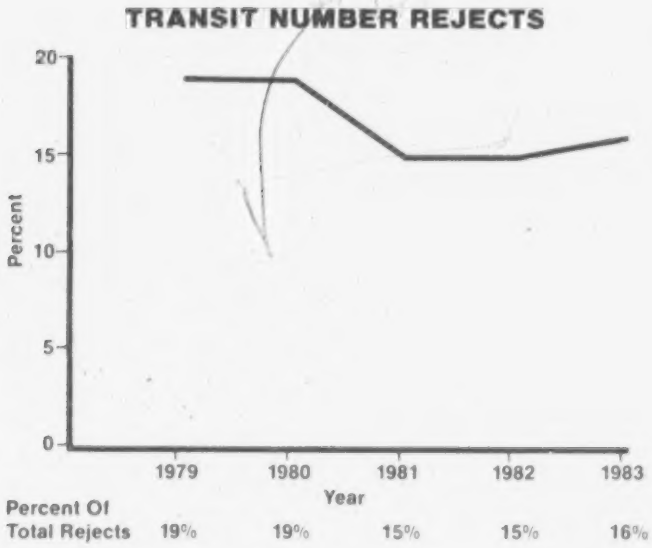
Types Of Rejects	
Transit Number	(16%)
Account Number	(20%)
Dollar Amount	(35%)
Serial Number	(5%)
Trancode	(7%)
Other	(17%)

In analyzing the cause of rejects the analysis continues to show that dollar amount encoding errors continue to be the primary cause of prime-pass rejects, accounting for 35% of all rejects (Figure 4). This type of reject is among the most difficult kind for the industry to deal with, especially with the entry of new processors to the check collection system and the large number of pre-encoded items originating from the corporate and public sectors. Many banks have installed quality control departments and monitoring systems which allow them to identify by bank, customer, proof operator and machine the exact source of encoding errors. Typically, these banks have reduced the number of encoding errors they experience.

Figure 3 also indicates that the printing industry needs to continue its efforts in quality control regarding the printing of other fields in the MICR line. Although many printers have implimented quality control programs which have helped to significantly reduce the reject rate, more can be done. The Institute has observed an increase in the number of rejects caused by excessive embossment of the MICR fields. It is recommended therefore that the printing industry, the reader-sorter equipment manufacturers, and the banking industry to work together to solve this problem quickly.

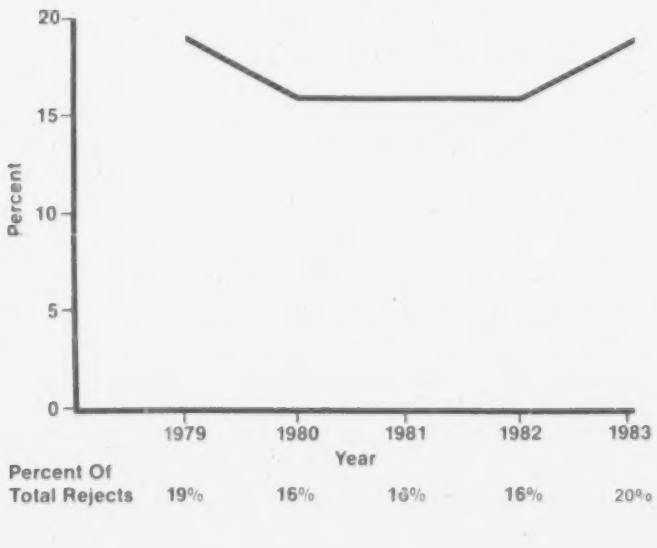
Figures 5 through 10 show the historical trend for each type of reject. Additional information is shown in Table 4 of Appendix B.

Figure 5



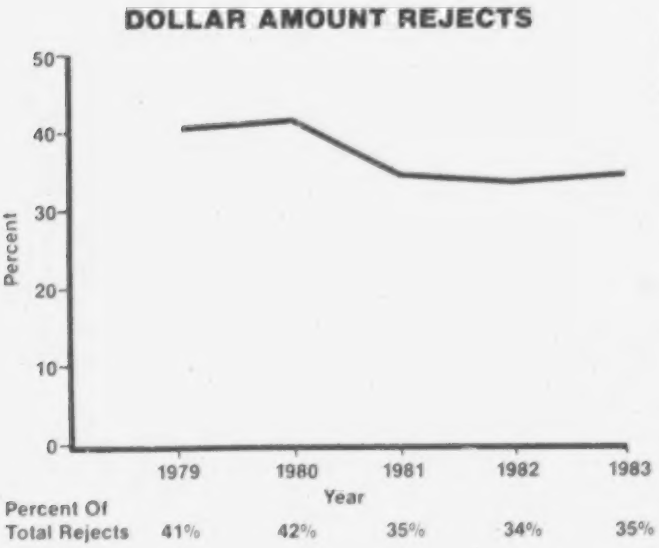
Percent Of Total Rejects	19%	19%	15%	15%	16%

Figure 6



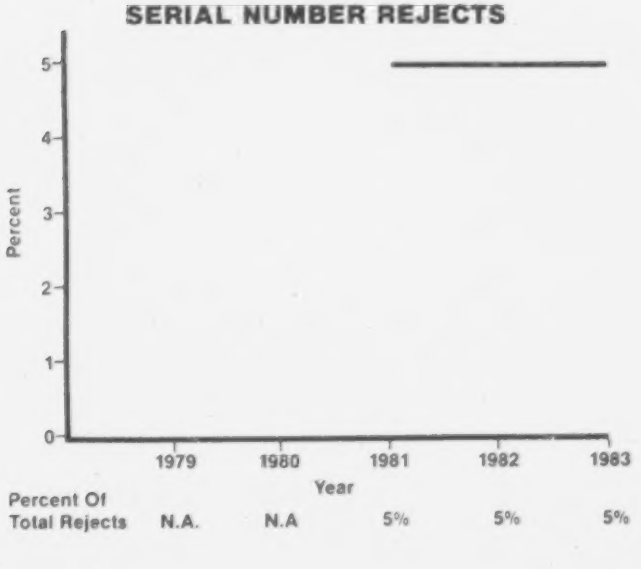
Percent Of Total Rejects	19%	16%	18%	16%	20%

Figure 7



Percent Of Total Rejects	41%	42%	35%	34%	35%

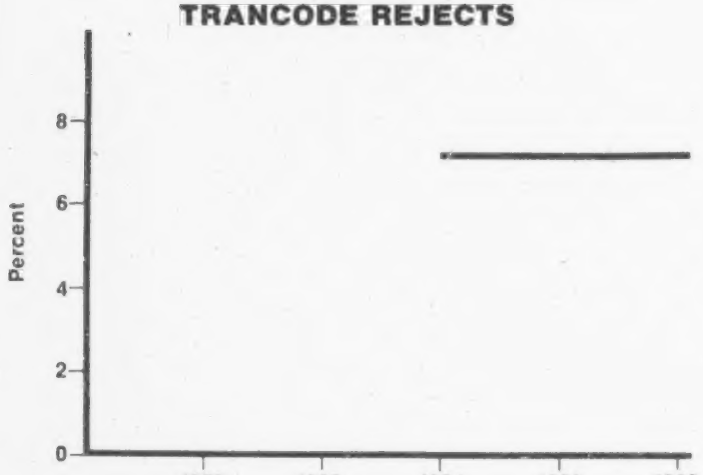
Figure 8



Percent Of Total Rejects	N.A.	N.A	5%	5%	5%

Figure 9

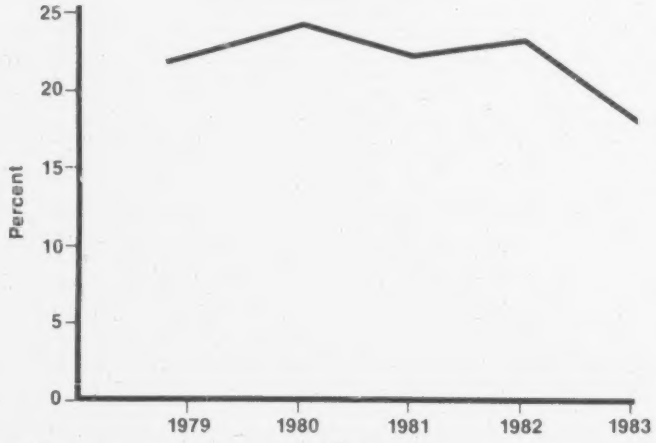
TRANCODE REJECTS



Percent Of Total Rejects	1979	1980	1981	1982	1983
	N.A.	N.A.	7%	7%	7%

Figure 10

OTHER REJECTS



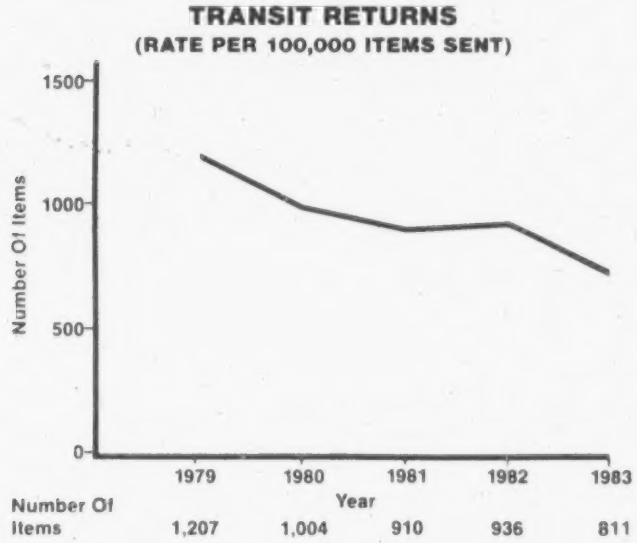
Percent Of Total Rejects	1979	1980	1981	1982	1983
	22%	24%	22%	23%	17%

Transit Returns

Definition: Items returned today for any reason that were orignally sent out as transit items from this bank.

The average rate decreased to 811 items per 100,000 transit items sent in 1983 from 936 items in 1982. As shown in Figure 11, the transit return rate has steadily declined since 1979 when it was 1,207 items.

Figure 11



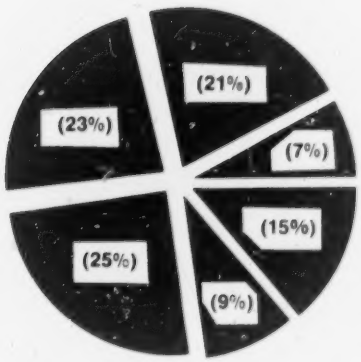
As shown in Figure 12, 28% of the banks surveyed had transit return rates of less than 600 items, while 15% of the banks had transit return rates in excess of 1,200 items.

The average dollar value of a transit return item decreased to $664 in 1983 from $678 in 1982. The historical trend is shown in Figure 13.
Regarding the distribution of the average dollar value of a transit return item, the survey indicates that 16% of the banks average less than $500, while 61% of the banks average between $500 and $1,000 per item as shown in Figure 14.

Figure 12

DISTRIBUTION OF TRANSIT RETURN RATE

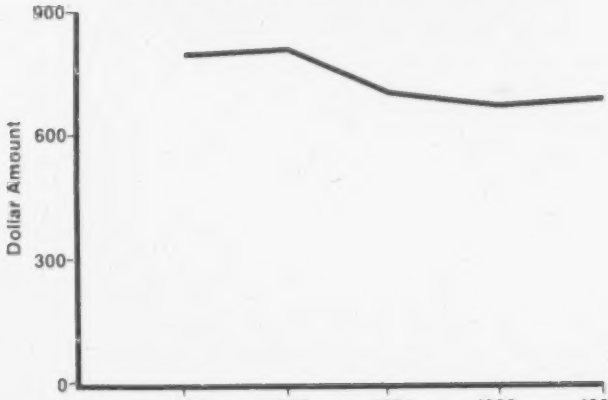
(RATE PER 100,000 SENT)



Transit Return Rate	
0 - 400	(7%)
400 - 600	(21%)
600 - 800	(23%)
800 - 1,000	(25%)
1,000 - 1,200	(9%)
Over 1,200	(15%)

Figure 13

AVERAGE DOLLAR VALUE OF TRANSIT RETURN ITEM

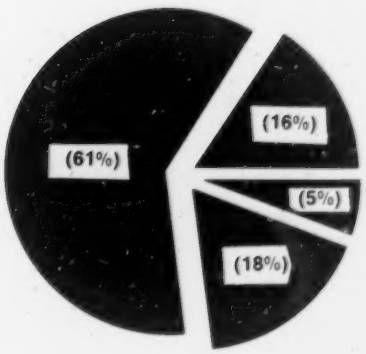


	1979	1980	1981	1982	1983
Average Dollar Value	$800	$813	$705	$678	$664

Figure 14

DISTRIBUTION OF TRANSIT RETURN DOLLARS

(RATE PER 100,000 SENT)



Transit Return Rate	
0 - 500	(16%)
500 - 1,000	(61%)
1,000 - 1,500	(18%)
Over 1,500	(5%)

The subject of return items and the corresponding delayed availability has been the topic of several congressional hearings, state investigations, and legal actions, which have resulted in the introduction and in some cases the passage of legislation to deal with the problem of return items.

As shown in the section on Exception and Return Item Processing. Our survey indicates that the productivity regarding return items is substantially behind that of other check processing functions.

The Federal Reserve Bank of Dallas has implemented a multiphase pilot study for return item processing and while some believe that the results have been good, others find the project lacking.

The ANSI (American National Standards Institute) X9B Committee is studying various technologies that can be implemented to automate return item processing much the same way that the MICR line has automated the forward processing of checks.

Irrespective of the individual viewpoints held by bankers, legislators, consumer groups, and the Federal Reserve, the question of how to improve the the processing of return items is a complex issue that questions many of the values and practices of not only the banking system but alsc the habits of the American public.

Free and Lost Items

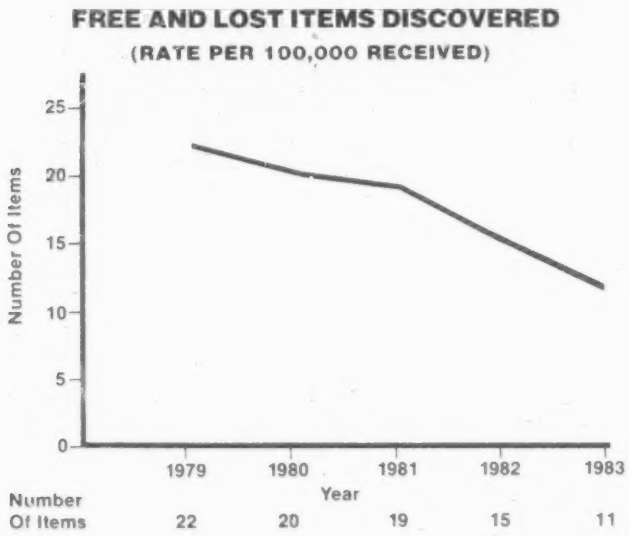
Definition: Free items are items received but not listed on the incoming cash letter. Lost items are items listed on the incoming cash letter but not received.

The combined average rate of free and lost items discovered declined to 11 items per 100,000 incoming items in 1983 from 15 items per 100,000 incoming items in 1982, as shown (Figure 15).

Significant improvements occurred in the Washington D.C. area where the average dropped to nine items in 1983 from 19 items in 1982. The Cleveland area experienced a similar drop to 11 items in 1983 from 19 items in 1982.

Additional information is provided in Tables 8 through 11 of Appendix B.

Figure 15



Missent, Miscoded, and Listing Error Items

Definition: Items that are discovered to have been missent for any reason, or that have been miscoded by this bank or other banks, or an error when an item was listed for one amount but drawn for a different amount.

The average rate of missent, miscoded, and listing error items discovered for each 100,000 transit items sent decreased to 13 items in 1983 from 14 items in 1982.

With respect to geographic areas, Denver continued to report the lowest rate of 0.7 items. Detroit led this year's list with nine items as compared to five items in 1982.

The survey also indicated that 48% of the banks had rates equal to or less than the national average.

Additional information is provided in Tables 12 through 16 of Appendix B.

Exception and Return Items

Definition: Transit items that require special reconcilement with other banks, such as missent, miscoded, listing errors, returns, and free and lost items.

The average rate of exception and return items discovered decreased to 837 items per 100,000 items sent in 1983 from 967 items per 100,000 items sent in 1982.

Only 26% of the banks had rates greater than 1,000 items in 1983, which is in marked contrast to the 38% of the banks that were above the 1,000 item level in 1982.

The survey indicates that the percent of exceptions, returns, and reject items to the total volume of items processed decreased to 1.9% in 1983 from 2.0% in 1982 (Figure 16).

The survey also indicates that 60% of the banks had rates less than 2.0% in 1983 as compared to 48% of the banks in 1982 (Figure 17). In addition, 14% of the banks had rates that exceeded 2.5% in 1983.

Additional information is provided in Tables 17 through 20 of Appendix B.

Figure 16

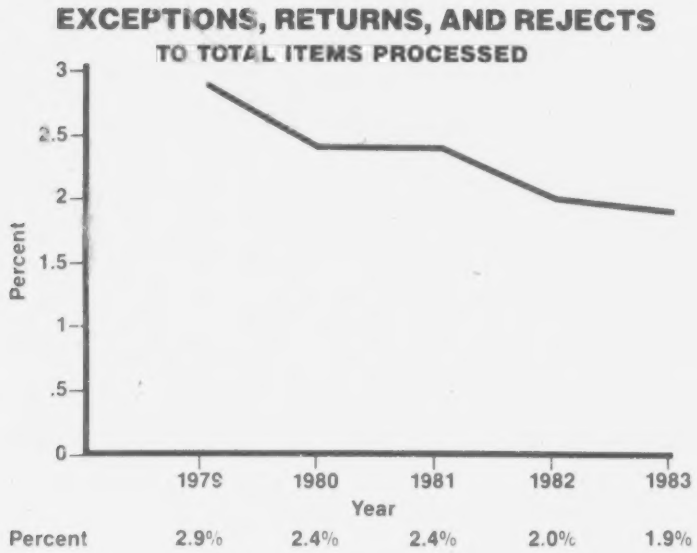
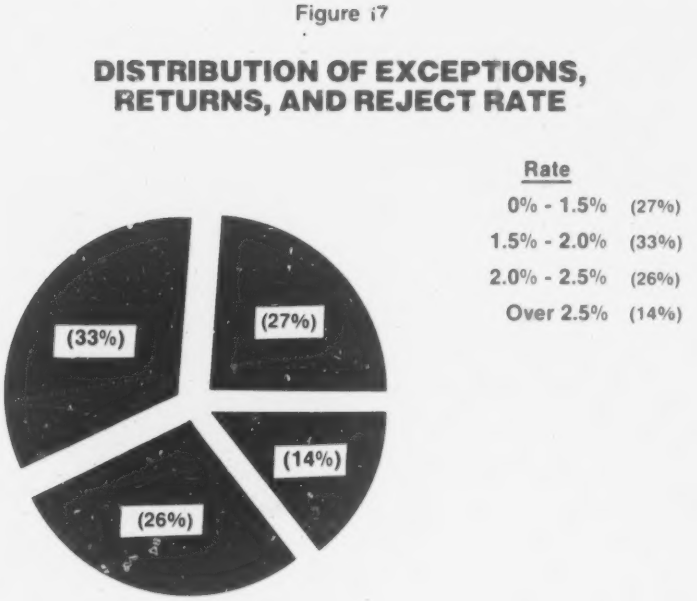


Figure 17



A Dollar Analysis of Return and Exception Items

The 1983 average weekly dollar volume of return items processed decreased 1.4% from 1982. There were minor changes in the 1983 average for the weekly dollar volume of exception items discovered and resolved. The average discovery total dropped by 19% in 1983, while the average resolved total decreased by 14% in 1983. Although this area continues to show some improvement, the 1979 average levels have not yet been reached. Additional information is provided in Table 21 of Appendix B.

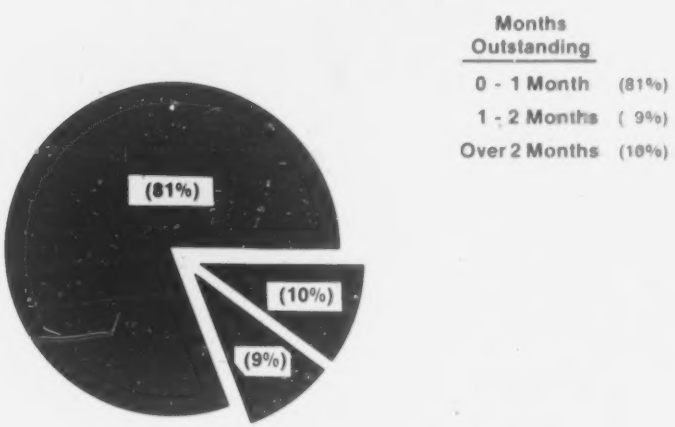
Outstanding Exception Items

Outstanding exception items are a key indicator of how the industry makes decisions regarding the use of resources for resolving exception items. In 1983, 81% of the dollars outstanding were resolved in less than one month, as shown in Figure 18. This compares favorably with 76% of the dollars that were resolved in less than one month in 1982.

Figure 18

DISTRIBUTION OF EXCEPTION ITEMS OUTSTANDING

(PERCENT OF DOLLARS)



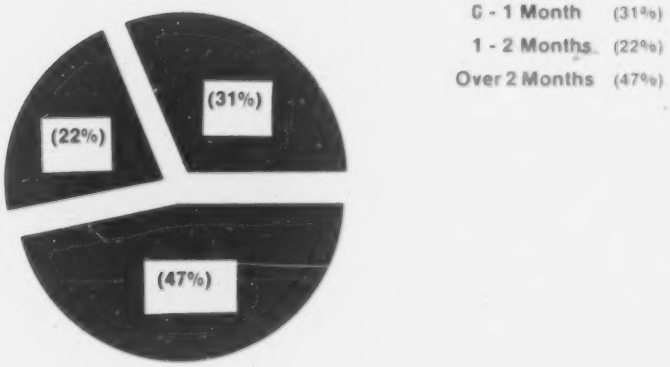
Bankers are concentrating their reconcilement efforts on the high-dollar --- low-volume exception items. Of the items outstanding, 31% were resolved in less than one month in 1983 (Figure 19). In 1982, only 26% of the items outstanding were resolved in less than one month, which reflects continued recognition of the high cost of float and the implied operating costs associated with exception item processing.

As indicated in the 1982 survey, the marketplace has developed several innovative procedures and software packages to improve the efficiency of the reconcilement process. With heightened micro-computer use in banking, more product offerings are expected in the industry.

Figure 19

DISTRIBUTION OF EXCEPTION ITEMS OUTSTANDING

(PERCENT OF ITEMS)



To better understand the long-term trends in the reconcilement of exception items, the following graphs were prepared:

Figure	
20	Percent of Outstanding Exception Items 0 to 1 Month Outstanding: Dollars
21	Percent of Outstanding Exception Items 1 to 2 Months Outstanding: Dollars
22	Percent of Outstanding Exception Items over 2 Months Outstanding: Dollars
23	Percent of Outstanding Exception Items 0 to 1 Month Outstanding: Items
24	Percent of Outstanding Exception Items 1 to 2 Months Outstanding: Items
25	Percent of Outstanding Exception Items over 2 Months Outstanding: Items

In addition to analyzing the outstanding exception items as indicated the age distribution of outstanding exception items was also compared for the average bank according to the method used to microfilm items: after reader-sorter processing, before reader-sorter processing, or during reader-sorter processing. Due to the various resources and sizes of the respondent banks, the amount and the number of items outstanding should not be compared. The key comparision is the relative percentage. The survey data indicate that banks have made progress in reducing the age of outstanding exception dollars, regardless of the microfilming method used.

Additional information is provided in Tables 22-23 of Appendix B.

Figure 20

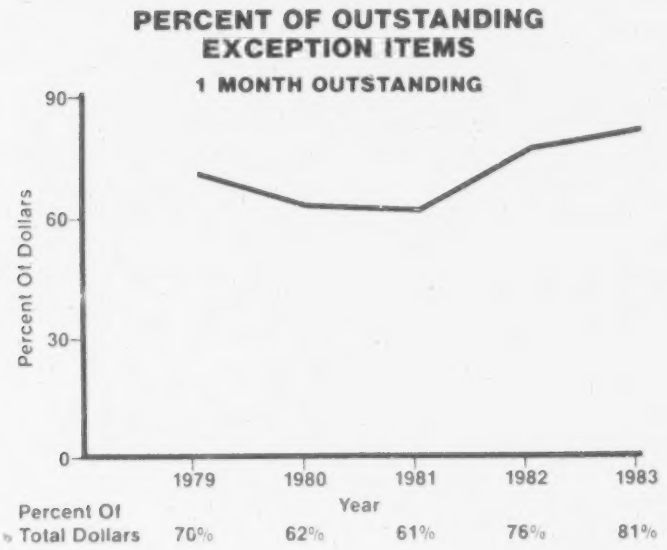


Figure 21

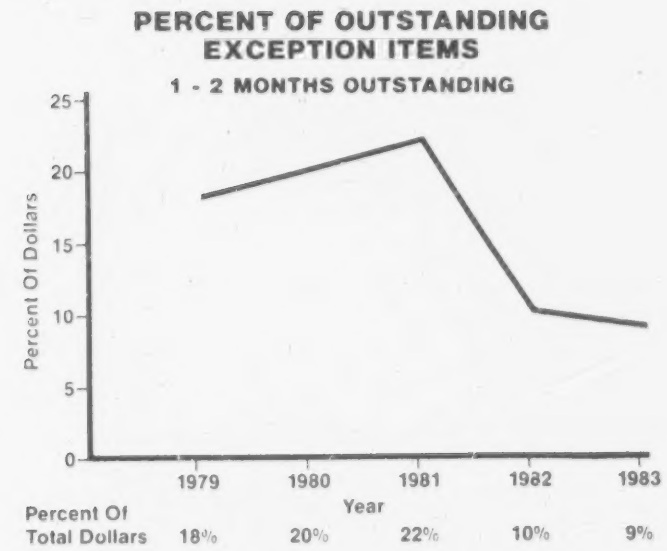


Figure 22

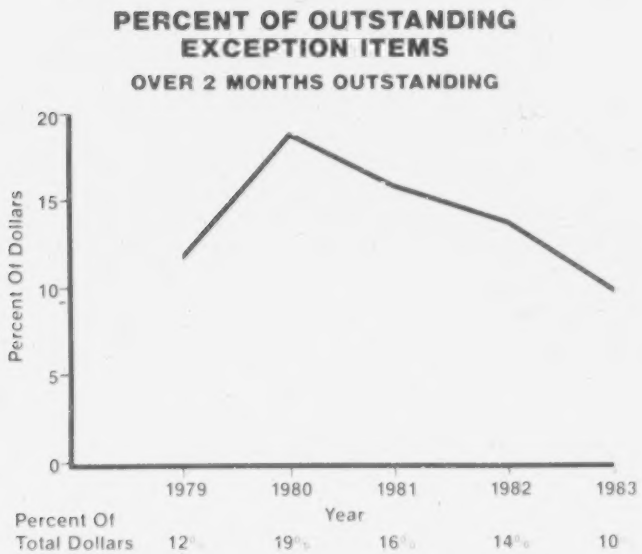


Figure 23

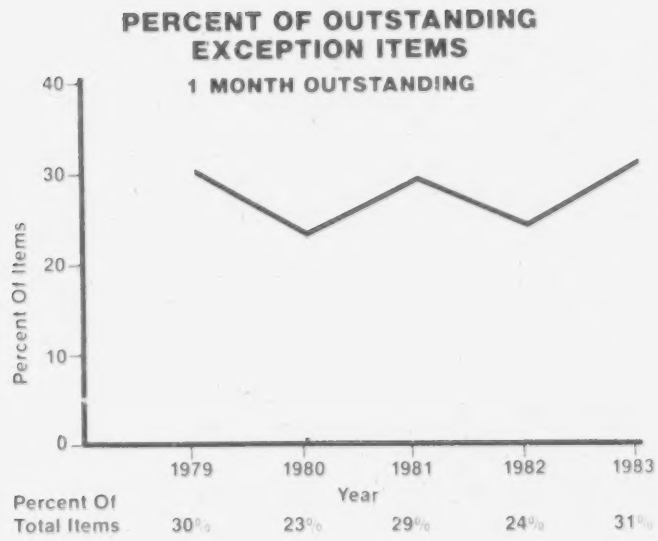


Figure 24

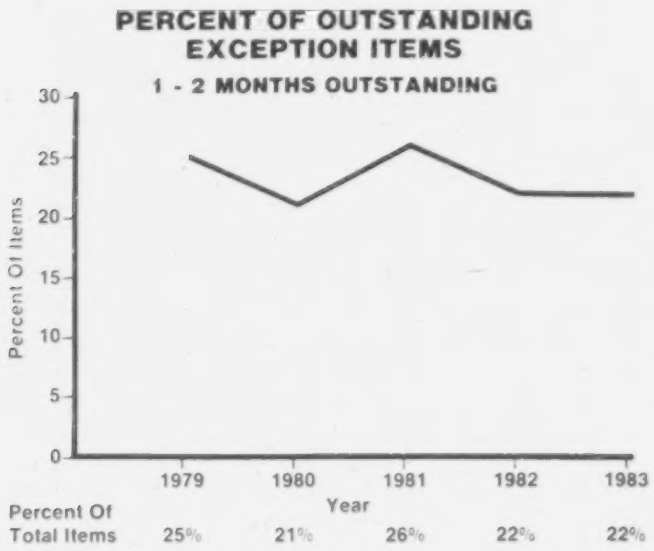
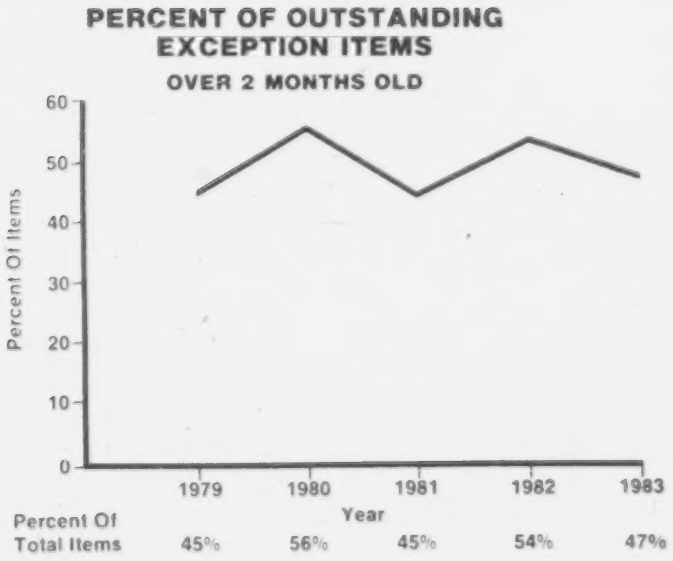


Figure 25



A Comparision of Balancing Policy and Experience

Since 1979, information has been gathered regarding balancing policy and the individual growth of exception items and the staff to process these items. In 1983, the trend was consistent with prior years in that banks continue to recognize the high cost of float and will send out unbalanced cash letters if they are within certain specified limits. The survey indicates that while 30% of the bankers believe that the exception item volume has grown, only 10% of them have increased their staffing levels. In addition, overall staffing levels decreased by 5% in 1983 as compared to a 1% decrease in 1982. Additional information is provided in Table 24 of Appendix B.

Transit Holdover

Definition: Items in transit holdover are those items that were received by a bank before a deadline but were not processed by either high- or low-speed systems in time to be sent for collection. These items may result in a loss of float to the bank and/or its customers.

The transit holdover rate declined to 1.19% in 1983 from 1.6% in 1982 (Figure 26). However, the average dollar value of a transit holdover jumped to $2,129 in 1983 from the lowest average dollar level of $408 in 1982, (Figure 27). The median dollar value of a transit holdover increased to $521 in 1983 from $413 in 1982. This difference between the average and the median is explained by several banks that experienced extremely high-dollar holdovers during the survey period.

The survey indicates that 83% of the banks have transit holdover rates of less than 1% in 1983 as compared with 75% of the banks in 1982.

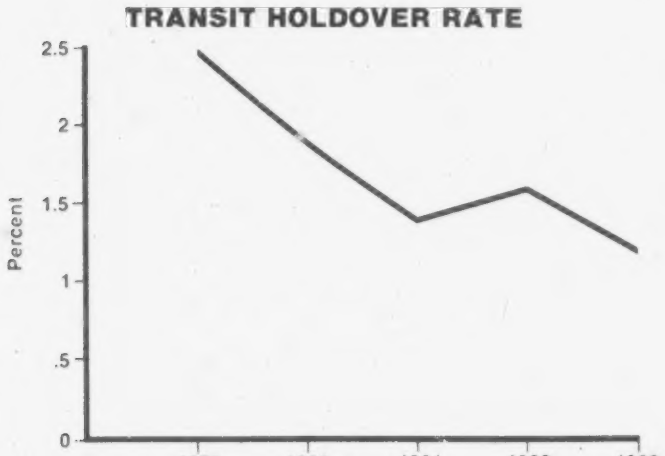
The Federal Reserve has continued its congressionally mandated float reduction efforts through explicit pricing, as of adjustments, fractional availability, improvement to the interdistrict transport system (ITS), and implementation of the high-dollar group sort.

The result has been to eliminate float from the Federal Reserve system and to pass that float back to the banking community. Bankers in turn have developed several systems that identify and quantify the amount of float which they then charge-back to their customers.

Currently there is a market disintermediation as some banks adjust to Federal Reserve actions without a corresponding adjustment to their customer accounts. In time, this disintermediation will disappear between the banks and their customers. Bankers must make greater efforts to reduce transit holdovers and to properly allocate the associated float to their respective customers.

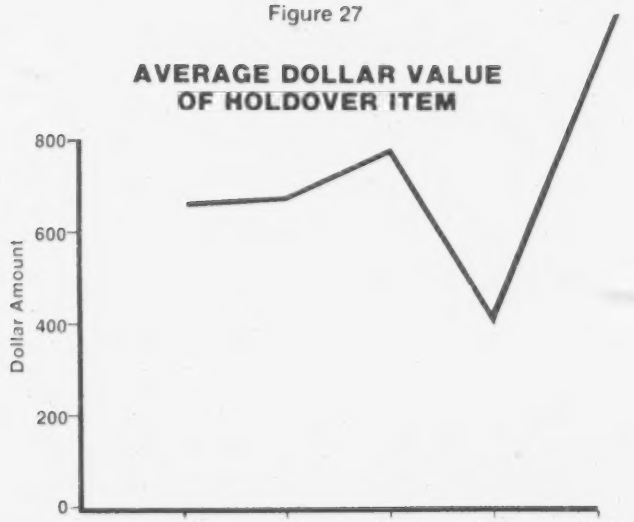
Additional information is provided in Tables 25-26 of Appendix B.

Figure 26



Transit Holdover Rate	2.5%	1.9%	1.4%	1.6%	1.2%

Figure 27



Average Dollar Amount	$661	$678	$781	$408	$2,129

This section of the survey on check processing productivity presents an analysis of the data gathered concerning the distribution of manpower according to the following major task groupings:

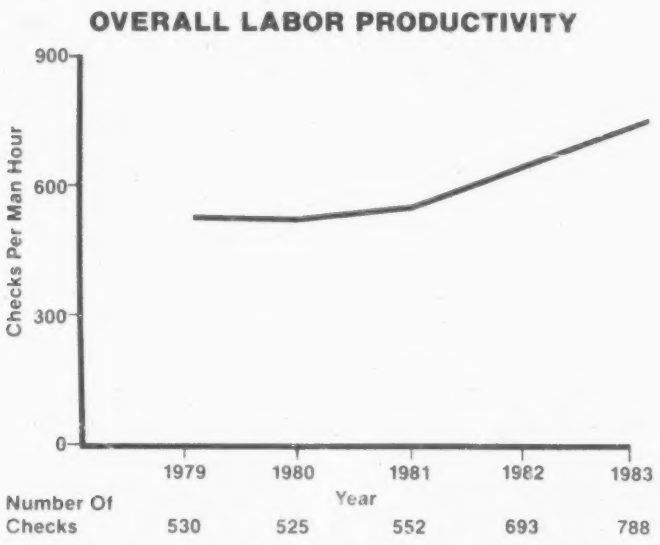
1. Data control (balancing and correction).
2. Encoding operations.
3. Check receiving operations.
4. Reader/Sorter operations.
5. Cash letter make-up.
6. Microfilming operations.
7. On-us processing and return item processing.
8. Exception item processing.
9. Reject processing.
10. Bulk filing.

The labor data reported were generally comprehensive. The problem of rounding was eliminated by requesting the actual item count. Productive man-hours rather than man-days provided a more uniform time base. Both the average and the median of the distributions were calculated. Caution should be exercised when comparisons are made between the following data and individual bank statistics. A wide variety of variables can account for rather significant deviations from the national and geographic norms. In addition, productivity is measured in man-hours not machine hours. (This is especially important with respect to reader/sorter productivity.)

Labor Intensiveness

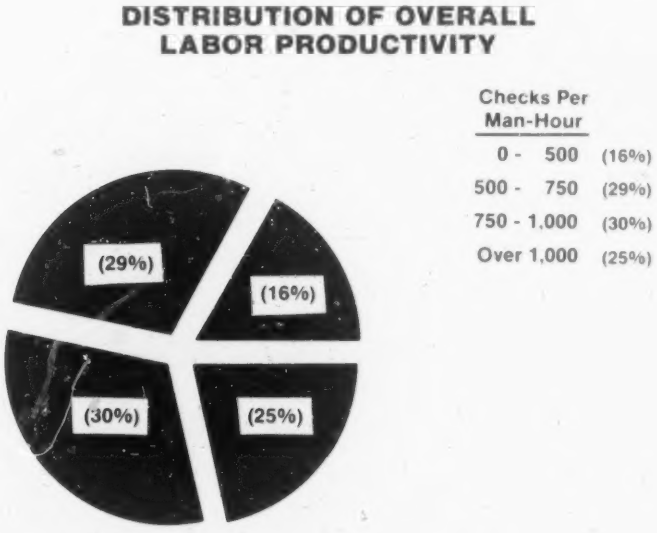
Labor productivity rose to an average of 788 items per man-hour in 1983, a 14% increase from the 693 items per man-hour in 1982 (Figure 28). The median increased to 803 items per man-hour in 1983 from 693 items in 1982.

Figure 28



The survey indicates that 45% of the banks have overall productivity rates below 750 items per man-hour (Figure 29), while 25% of the banks have rates that exceed 1,000 items per man-hour.

Figure 29



Regarding the geographic differences that exist, the survey found the relative rankings to be:

Area	Rate
Minneapolis/St. Paul	1.076
San Francisco	978
Pittsburgh	970
Cleveland	944
Dallas	905
Washington D.C.	885
Houston	834
Atlanta	821
St. Louis	807
Boston	794
Philadelphia	786
Denver	782
Chicago	764
Los Angeles	691
Detroit	601
New York	552

Historical productivity rates for each geographic area and additional information are given in Tables 27-28 of Appendix B.

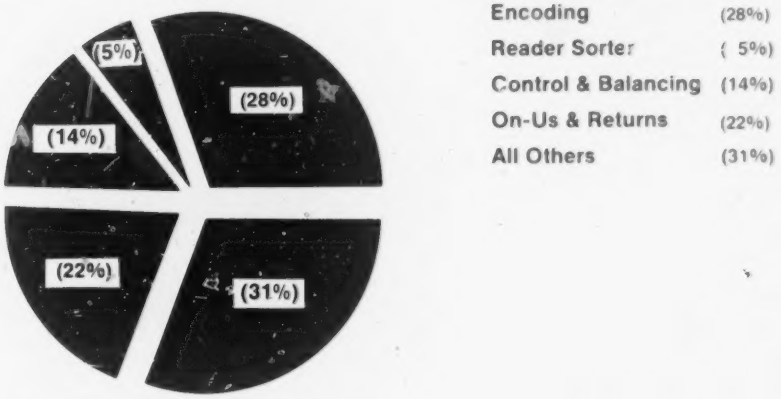
Labor Distribution

A distribution of the major tasks performed in check processing is illustrated in Figure 30. The survey showed that the encoding function involved 28% of the total man-hours devoted to check processing in 1983. By contrast, only 5% of the total man-hours is required to actually process checks through the reader/sorter equipment.

In 1980, two new tasks - check receiving (Task C) and bulk filing (Task H)- were added to the survey. Each of the tasks A through I will be described. Additional information is provided in Table 29 of Appendix B.

Figure 30

DISTRIBUTION OF OVERALL LABOR PRODUCTIVITY BY TASKS



Data Control - Balancing and Correction

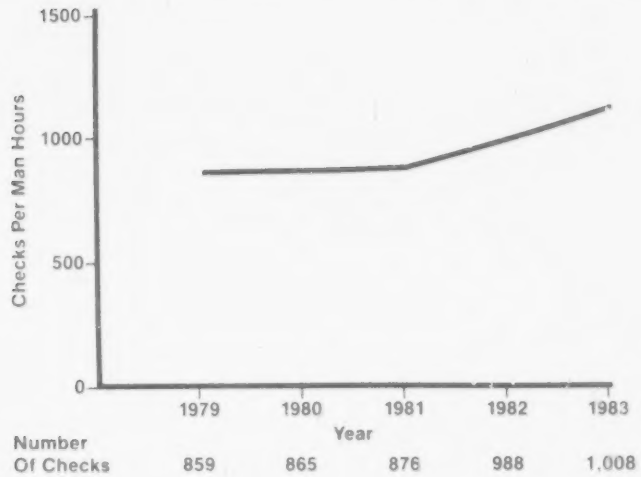
In 1983, average balancing and correction productivity increased 14% to 5,311 items per man-hour from 4,651 items per man-hour in 1982. The median productivity, however, increased 26% to 6,004 items per man-hour from 4,782 items per man-hour in 1982. Continued automation by several banks has contributed to the improvement of productivity in this area. Additional information is provided in Table 30 of Appendix B.

Encoding Operations

Encoding productivity has continued to increase since 1979 (Figure 31). The survey shows that the combined average for both multipocket and single-pocket proof machines was 1,008 items per man-hour in 1983 as compared to 988 items per man-hour in 1982. The continued use of incentive programs and quality control techniques has contributed to this increase. Additional information is provided in Tables 31-34 of Appendix B.

Figure 31

ENCODING LABOR PRODUCTIVITY



Number Of Checks	859	865	876	988	1,008

Check-Receiving Operations

The current survey indicates that some gain has been made in the check receiving operations (Figure 32). In 1983, the average productivity was 10,164 items per man-hour up from 9,359 items per man-hour in 1982. The median productivity was 13,780 items per man-hour in 1983 as compared to 12,331 items per man-hour in 1982 (Figure 33).

Figure 32

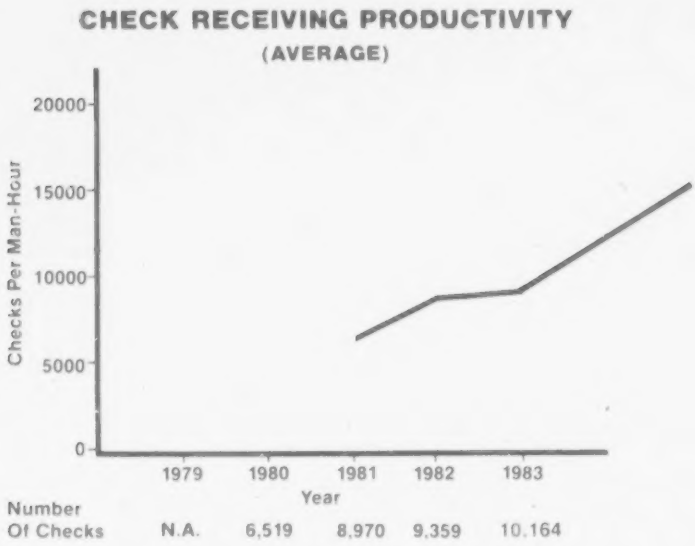
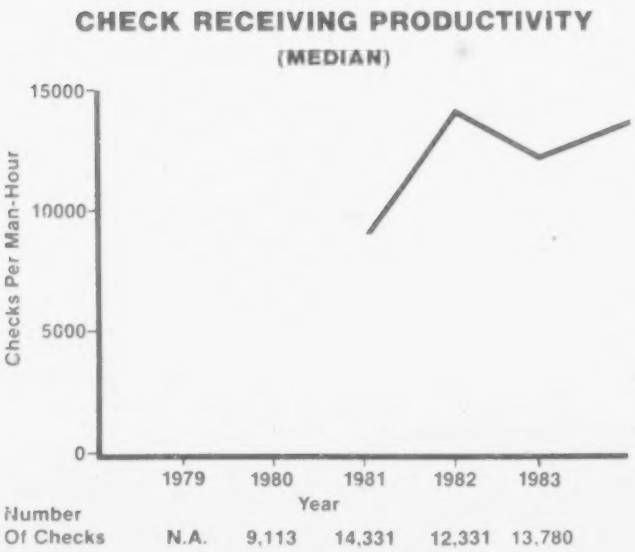


Figure 33



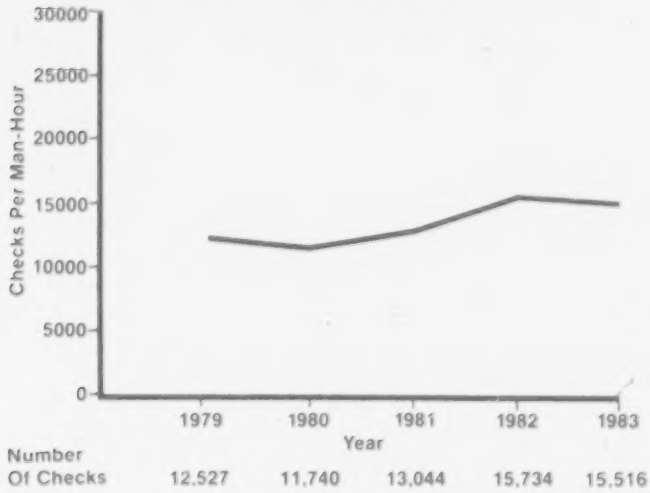
A detailed analysis of the individual bank responses showed that while the volume of checks received did not materially change there was a significant drop in the total man-hours reported. Upon further investigation, it was found that in those banks which had the highest productivity, a modest increase in supervisory man-hours resulted in a large drop in clerical man-hours. Additional information is provided in Table 35 of Appendix B.

Reader/Sorter Operations

The average number of checks processed by reader/sorter operations decreased to 15,516 items per man-hour in 1983 (Figure 34). In 1982, the number of items per man-hour was 15,734.

Figure 34

READER/SORTER LABOR PRODUCTIVITY

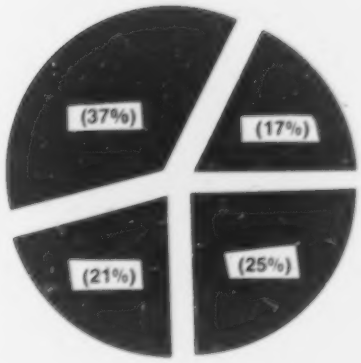


Number Of Checks	12,527	11,740	13,044	15,734	15,516

The survey indicates that 25% of the banks have reader/sorter productivity in excess of 40,000 items per man-hour (Figure 35). Additional information is provided in Table 36 of Appendix B.

Figure 35

DISTRIBUTION OF READER/SORTER PRODUCTIVITY



Checks Per Man-Hour	
0 - 10,000	(17%)
10,000 - 25,000	(37%)
25,000 - 40,000	(21%)
Over 40,000	(25%)

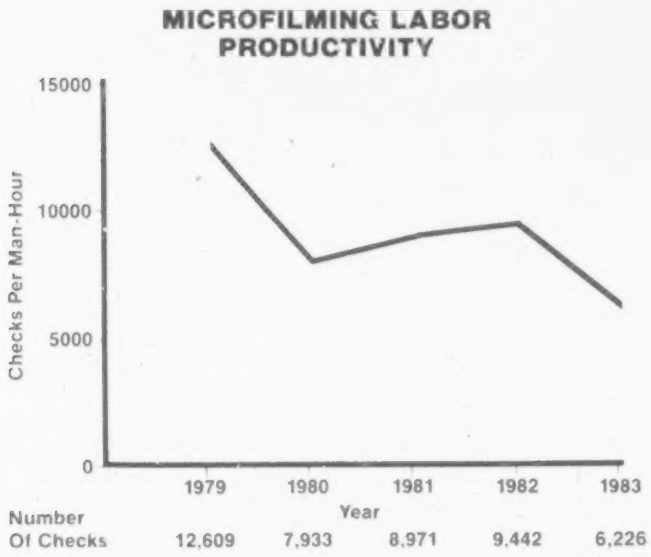
Cash Letter Make-Up and Microfilming

Combined cash letter make-up and microfilming labor productivity increased to 6,923 items per man-hour in 1983 as compared to 6,803 items in 1982.

A separate analysis was done for cash letter make-up and microfilming. Average cash letter make-up productivity increased 10% in 1983 to 7,173 items per man-hour, up from 6,532 items in 1982. The median increase was only 7% or 8,161 items per man-hour in 1983, up from 7,659 items in 1982.

Microfilming productivity fell significantly in 1983 (Figure 36). The survey indicates that the average productivity declined to 6,226 items per man-hour in 1983 as compared to 9,442 items in 1982. While the analysis failed to identify the cause of the decline in microfiliming productivity, several scenarios could account for this situation. Additional information may be found in Tables 37-39 of Appendix B.

Figure 36



One note of interest and caution is in order if comparisons between banks and the Federal Reserve are made: Banks are required by law to microfilm all checks while the Federal Reserve is exempt from such requirements.

On-Us Processing - Labor Productivity

Average on-us productivity decreased to 1,359 items per man-hour in 1983 from 1,497 items in 1982. The median increased only slightly to 1,399 items per man-hour in 1983 from 1,311 items in 1982. The difference between the average and the mean can best be accounted for by looking at the number of banks that were at the low end of the productivity spectrum in 1983 versus the larger number of banks in that range in 1982.

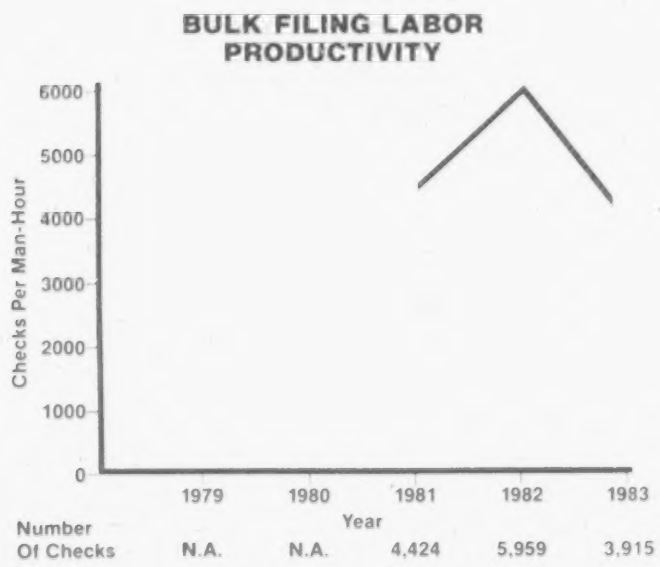
Productivity in on-us processing again seems to be correlated with the percentage of on-us items received. The survey shows that the highest productivity occurs when the percent of on-us items received exceeds 70%, while the two lowest productivity figures occur at the 0-10% and 50-70% ranges. This suggests that there may be both economies and dis-economies of scale. Additional information is provided in Tables 40-41 of Appendix B.

Bulk Filing Labor Productivity

Bulk filing labor productivity was first measured in 1981 and since that time a large number of banks have implemented bulk filing. However, due to the wide variances in how bulk filing has been installed and how man-hours are reported, caution should be exercised when BAI survey results are compared to an individual bank's operations.

The survey indicates that the average productivity in bulk filing was 3,915 items per man-hour in 1983 as compared to 5,959 items in 1982 (Figure 37).

Figure 37



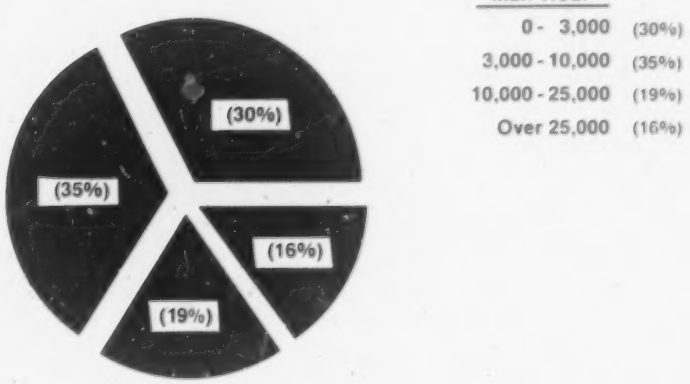
However, the analysis revealed that 28 banks that in the 1982 survey reported an average productivity of 5,627 items per man-hour did not report bulk filing data in the1983 survey. If it is assumed that their collective productivity remained constant and had been included in the 1983 survey data, then the average bulk filing productivity would have been 4,203 items per man-hour. The remaining difference can be accounted for in that the missing 28 banks were in the highest productivity quartiles of the survey.

Year	Items	Man-Hours	Average
1983	76,387,712	19,512	3,915
1982	22,255,596	3,955	5,627
	98,643,308	23,467	4,203

Figure 38 shows that while 30% of the banks have under 3,000 items per man-hour, 16% have productivity in excess of 25,000 items per man-hour. Further analysis shows that it is this latter group of banks that do most of the bulk filing. Additional information is provided in Table 42 of Appendix B.

Figure 38

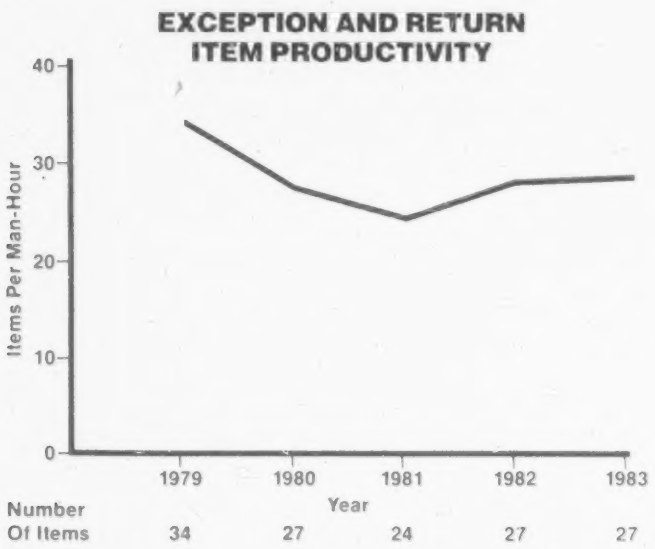
DISTRIBUTION OF BULK FILING PRODUCTIVITY



Exception and Return Item Processing

Exception and return item processing remained flat at 27 items per man-hour (Figure 39). While the industry has reversed its downward trend in this area, two factors are most evident: First, banks are not processing these items today as well as they were four years ago. Second, when compared to the overall labor productivity of 788 items per man-hour, the labor intensiveness is readily apparent.

Figure 39



The analysis indicates that return item productivity is commanding significant attention (see comments on supervisory time in section on Miscellaneous Statistics) but productivity is decreasing (Figure 40). In 1983, return item productivity decreased to 54 items per man-hour from 56 items in 1982. Exception item processing productivity has remained steady at 3 items per man-hour since 1979 (Figure 41). Additional information is provided in Tables 43-46 of Appendix B.

Bankers, equipment manufacturers, printers, legislators and regulators are all concerned about the efficient handling of return items. However, the fact remains that while technology exists to solve the problem of inefficiency, the implementation of that technology is being impeded by vested interests, legal considerations, capital requirements, cost considerations, national habits, and the lack of an appropriate incentive to bring about a much needed change to the payment system.

Exhaustive studies have been completed, recommendations have been made, and new studies and pilots have been undertaken by a wide variety of industry groups, consultants, bankers, and the Federal Reserve. All of these "projects" have to date met with the same fate, i.e., they have identified the problem and possible solutions but have failed to change the way the payment system handles return items nation wide.

Figure 41

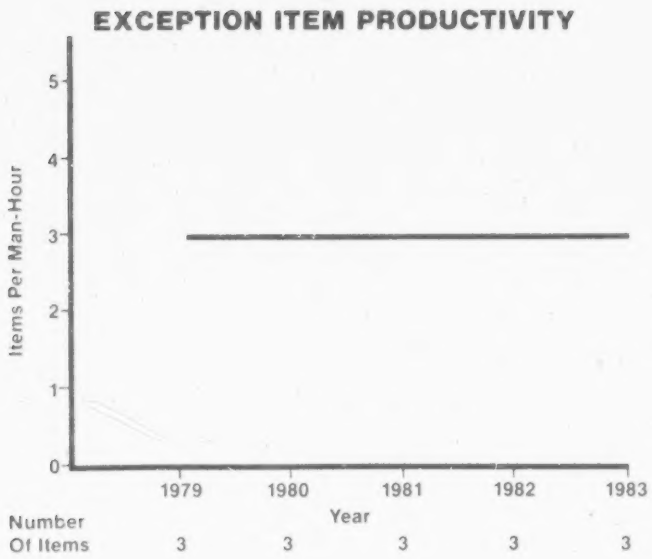
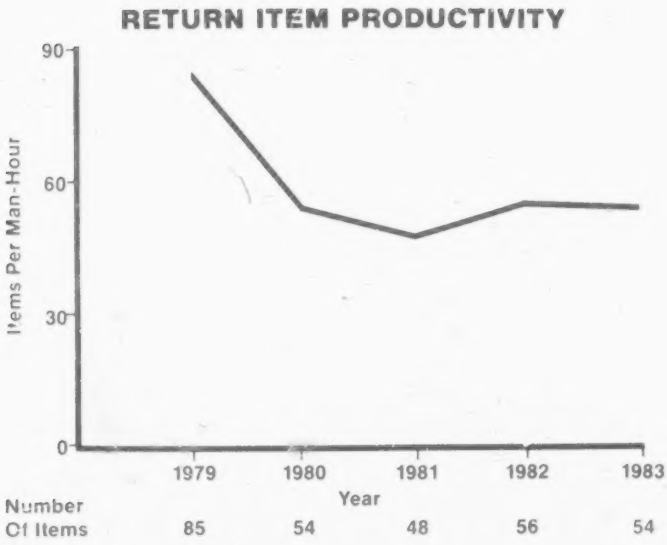


Figure 40



Currently two new efforts are under way that address the issues of return item processing. First, Bank Administration Institute in cooperation with the Federal Reserve has begun an in-depth study to identify both the private sector and the Federal Reserve costs of processing return items. This study addresses both the traditional method of return item processing as well as the method used in the Dallas Pilot Project of returning items directly to the bank of first deposit.

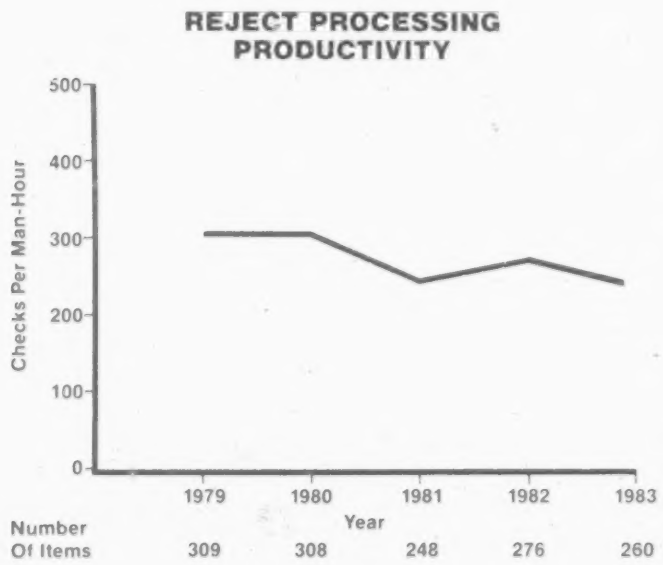
The second effort is the work in progress by the American National Standards Institute (ANSI) X9B Committee. This committee and its working group have reviewed three different technologies from Burroughs Corporation, IBM, and Recongition Equipment Incorporated.

In addition to the foregoing efforts described, the Federal Reserve, Congress, and various states either have enacted or are considering legislation or regulatory changes to deal with the processing of return items as it affects consumers, delayed availability, credit risk, and changes in Regulation J.

Reject Processing Productivity

Reject processing productivity decreased (Figure 42). The survey indicates that reject processing productivity decreased to 260 items per man-hour in 1983 from 276 items in 1982.

Figure 42



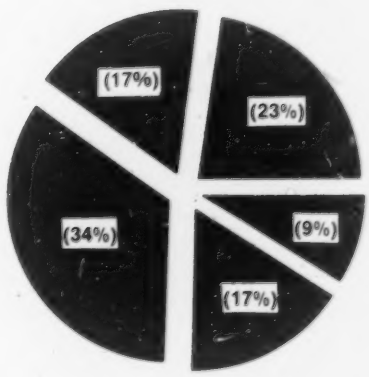
The analysis indicates that there are no geographic considerations regarding the changes from 1982 to 1983 survey data. The areas are ranked by productivity rate as follows:

Area	Rate
Detroit	451
Pittsburgh	387
Philadelphia	372
Los Angeles	346
Washington D.C.	331
Chicago	313
Atlanta	308
St. Louis	295
Dallas	294
Minneapolis	244
Houston	216
Boston	209
New York	209
San Francisco	180
Cleveland	159
Denver	145

In 1983, 9% of the banks achieved productivity in excess of 1,000 items per man-hour (Figure 43). In contrast, 40% of the banks had productivity of less that 300 items per man-hour. This wide variance in productivity can best be accounted for by looking at the differences in how banks process rejects. As expected, those banks that have automated systems have higher productivity than those that rely solely on manual methods. Additional information is provided in Tables 47-48 of Appendix B.

Figure 43

DISTRIBUTION OF REJECT PROCESSING PRODUCTIVITY



Checks Per Man-Hour

0 - 200	(23%)
200 - 300	(17%)
300 - 500	(34%)
500 - 1,000	(17%)
Over 1,000	(9%)

Labor Productivity Summary

As previously noted, overall check processing productivity increased 14% in 1983 as compared to 1982. Most of the individual tasks associated with check processing showed improvement. However, much of the check processing operation still remains labor-intensive and when measured against reader/sorter productivity, it is woefully lacking.

As banking deregulation continues and new comptetitive pressures are brought to bear on banks by nonbank organizations as well as the Federal Reserve, the challenge for check processing professionals will be to better manage check processing as a business, implementing technology and managment skills that will make them more efficient and keep their products competitive in the marketplace.

The nation's payment system has made significant strides in recent years, but much has yet to be accomplished. Whether one chooses to believe the predictions of the Federal Reserve Bank of Atlanta, which tell that the volume of checks will start to decrease in the 1990's, or the projections of private industry sources, which tell that the volume of checks will increase in the 1990's, one thing appears to be certain: Checks will not disappear overnight. Recognition of this fact should serve to motivate everyone involved in check processing to do a better job.

Average Man-Hour Expenditure per 10,000 Items*

Tasks	Man-Hours				
	1979	1980	1981	1982	1984
Balancing and corrections	3.5	3.5	3.1	2.3	1.8
Encoding	5.7	5.0	5.2	3.6	3.5
Check receiving	-	0.9	1.0	1.0	1.0
Reader/sorter operations	0.8	0.9	0.7	0.6	0.6
Cash letter make-up and microfilming	1.4	1.3	1.2	1.0	0.9
On-us paying, filing, and return items processing	5.3	4.3	3.9	3.3	2.8
Exception item processing	1.0	1.3	1.2	1.1	0.9
Bulk filing	-	0.6	0.3	0.3	0.4
Miscellaneous labor	1.2	1.3	1.5	1.2	0.8
Total man-hours+	18.9	19.1	18.1	14.4	12.7

*Total man-hours times the distribution of labor from Table 29.
Example ((10,000/788)*14.3%)=1.8)

+10,000 items divided by the average overall productivity from Table 27.

-No comparable data collected.

In 1978, the first performance measurement statistics were added to the annual survey to provide for a more refined breakdown of the reasons for rejects than had previously been requested. The second reason was to determine the usuage and productivity for automated reject processing equipment.

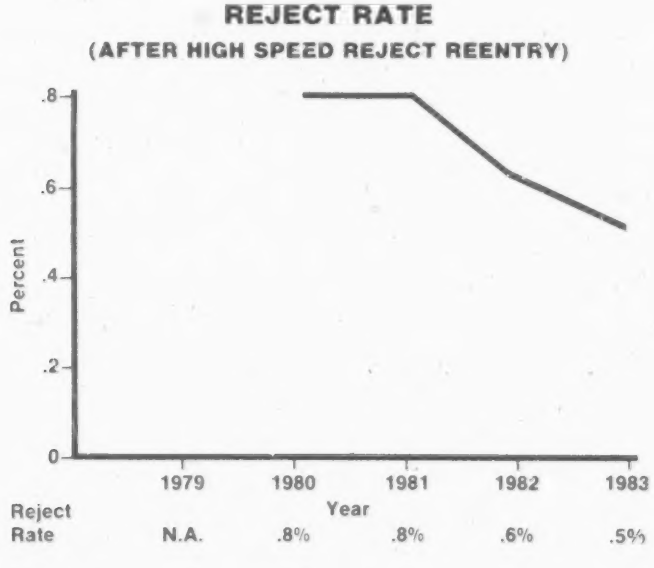
Since 1978, this section of the survey has dealt with automated encoding equipment (1979), high-speed reentry of prime-pass rejects under software system control (1980), miscellaneous statistics on pre-encoded items and a comparison of supervisory to clerical man-hours (1981), and the percent of on-us items (1982). No new information was requested in 1983.

Reject Reentry

Several banks have the capability of high-speed reentry of prime-pass rejects under software system control. Although the rejected item should be properly merged into its appropriate place in the captured data base, some banks have experienced difficulties in the subsequent balancing operation as a result of using high-speed reject reentry.

In the 1983 survey, 58 of the reporting banks were using this type of system. Figure 44 shows that the average reject rate after high-speed reject reeentry improved 17% to 0.5% in 1983 as compared to 0.6% in 1982. The analysis shows that 60% of the reporting banks had rates below 0.5% in 1983 as compared to 51% of the banks in 1982. The average number of rejects reentered from the prime pass decreased to 22,728 items in 1983 from 38,351 in 1982.

Figure 44



Reject reentry productivity decreased to 227 items per man-hour in 1983 (Figure 45). In 1982, reject reentry productivity was 256 items per man-hour. The analysis indicates that 52% of the banks had productivity rates below 300 items per man-hour (Figure 46), while 17% of the banks were able to achieve productivity of more than 600 items per man-hour.

Figure 45

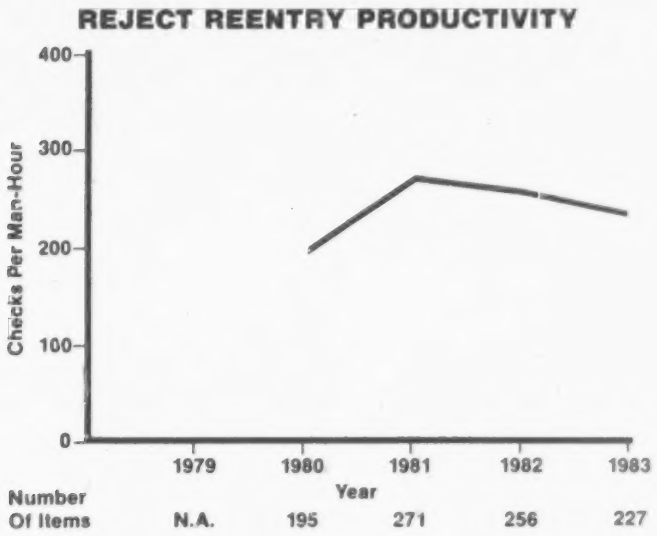
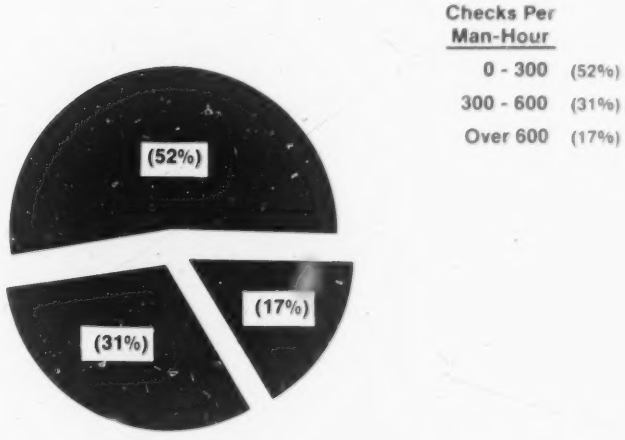


Figure 46



The survey also indicated a 38% increase in the number of banks that are doing full-field repair.

Automated Reject Processing

Banks that do not use automatic reject reentry usually employ some manual method of modifying their captured data base. The survey indicates that in 1983 there was a shift in the percent of banks using manual versus automated means of handling rejects. The survey shows that in 1983 only 21% of the banks indicated that they did not use automated systems as compared to 28% in 1982.

Regarding the volume of rejects processed, the survey indicates a slight increase in the percent of rejects handled by automated systems (Figure 47) to 81% as compared to 77% in 1982. Conversely, rejects handled by manual methods decreased to 19% in 1983 (Figure 48) down from 23% in 1982. In addition, the survey indicates that more than half of the banks process more than 90% of their rejects through automated reject reentry systems (Figure 49). Additional information is provided in Tables 49-57 of Appendix B.

Figure 47

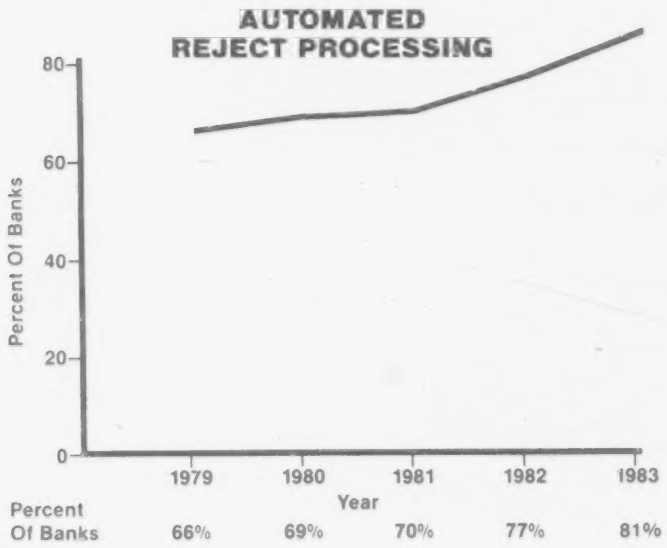


Figure 48

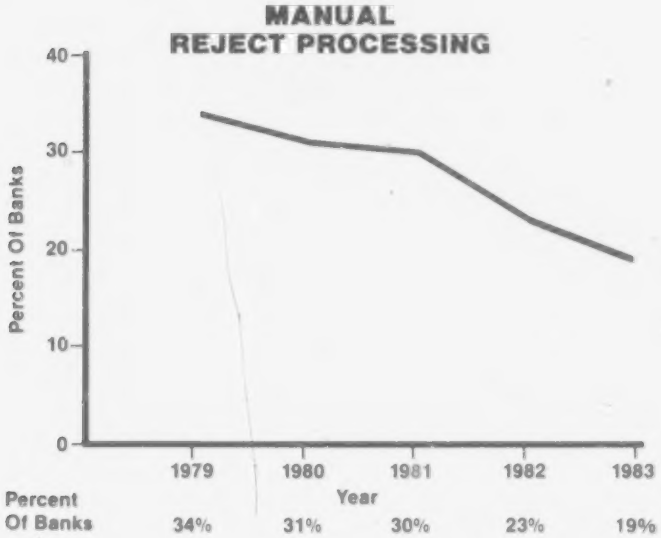
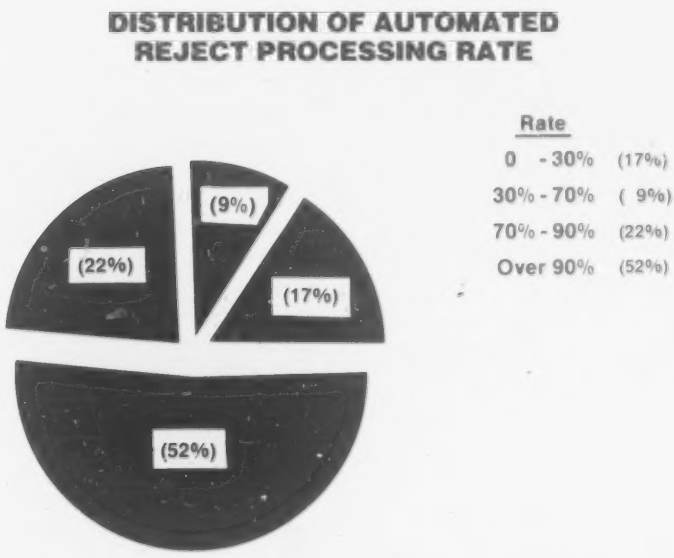


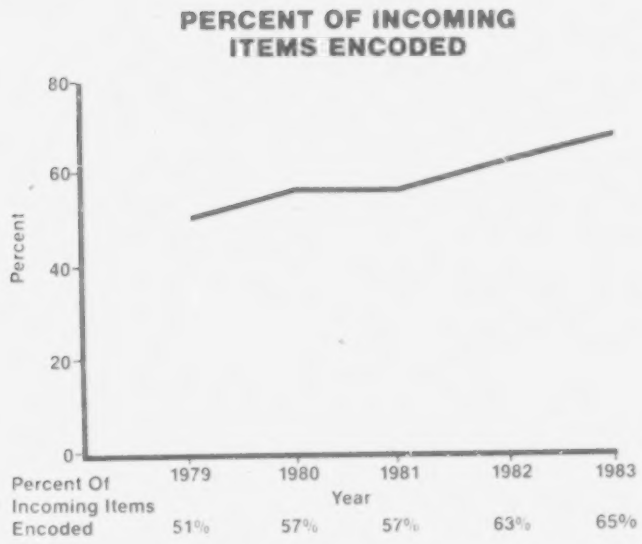
Figure 49



Miscellaneous Statistics

Figure 50 shows that the percent of incoming item that have been encoded increased in 1983 to 65% from 63% in 1982. A wide variety of factors influence the mix between encoded and unencoded items. Such things as new lock-box business, cash letter business, technological developments, and market experiments all contribute to the growth and decline of preencoded items. Among the activities occurring in some parts of the country are tests in which retail customers encode the dollar amount of both their cashed and deposited checks. If these market experiments become commonplace, the percent of incoming items encoded can be expected to increase rather dramatically. Additional information is provided in Table 58 of Appendix B.

Figure 50



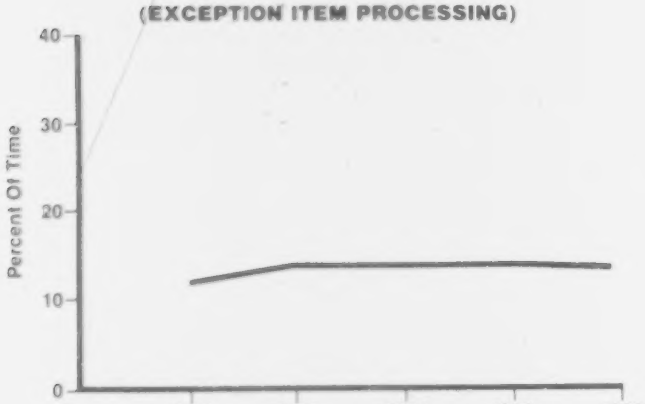
In 1983, the survey observed a minor drop in the percent of supervisory time to clerical man-hours to 12% (Figure 51), down from 13% in 1982. However, further analysis revealed that within the various tasks there were shifts in the use of supervisory time as bank management reacted to quality issues and productivity concerns. Figure 52 shows that supervisory time remained stable in the exception item processing area. Figure 53 shows that supervisory time decreased in the microfilming area, and Figure 54 shows an increase in supervisory time in the return item area.

The encoding function received 11% of the supervisory time in 1983 (Figure 55) down from 12% in 1982. However, cash letter make-up remained stable at 15% in 1983 (Figure 56). Additional information is provided in Table 59 of Appendix B.

Figure 52

SUPERVISORY TIME TO CLERICAL MAN-HOURS

(EXCEPTION ITEM PROCESSING)

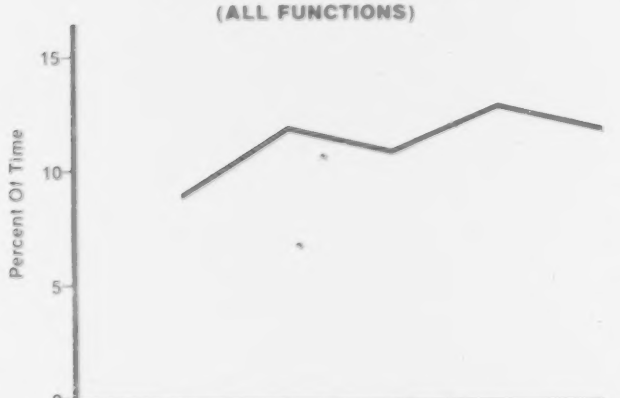


Percent Of Time	12%	14%	14%	14%	14%

Figure 51

SUPERVISORY TIME TO CLERICAL MAN-HOURS

(ALL FUNCTIONS)

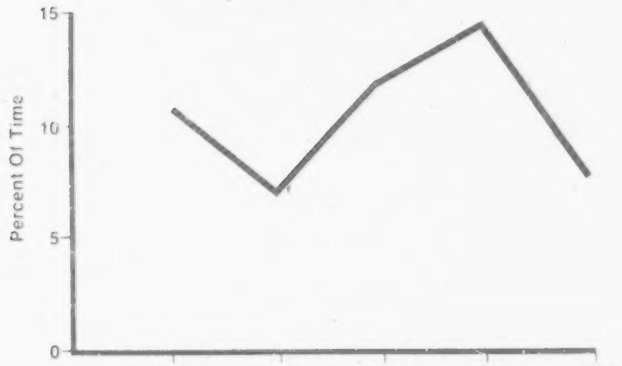


Percent Of Time	9%	12%	11%	13%	12%

Figure 53

SUPERVISORY TIME TO CLERICAL MAN-HOURS

(MICROFILMING)



Percent Of Time	10%	6%	11%	13%	7%

Figure 54

SUPERVISORY TIME TO CLERICAL MAN-HOURS

(RETURN ITEMS)

Percent Of Time	24%	13%	12%	11%	13%

Figure 55

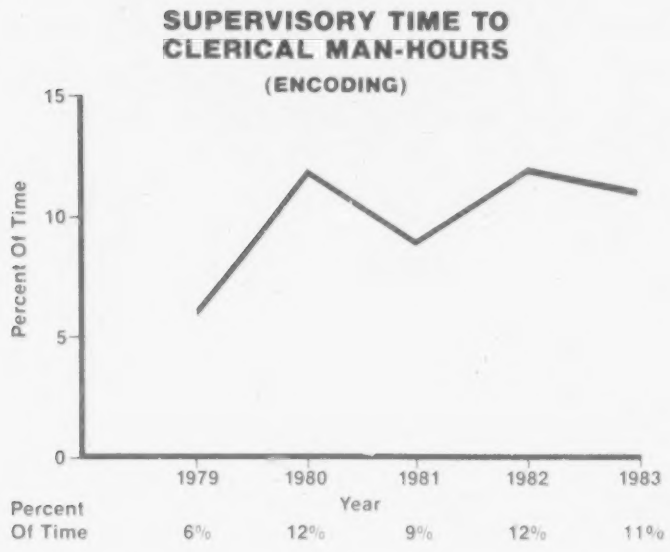
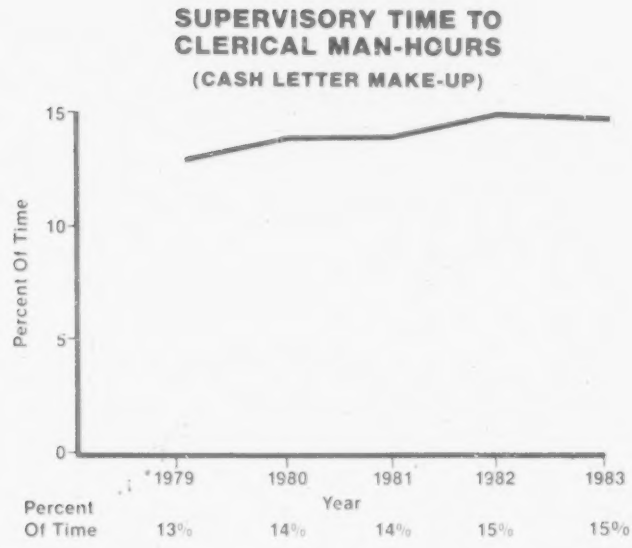


Figure 56



The percent of on-us items as compared to total items processed declined slightly to 45% in 1983 from 48% in 1982. Additional information is provided in Table 60 of Appendix B.

Our survey indicates payable-through drafts as a percent of total items processed increase by 46% in 1983 to 3.5% as compared to 2.4% in 1982. Additional information may be found in Table 61 of Appendix B.

CHECK TRUNCATION AND ELECTRONIC CHECK PRESENTMENT

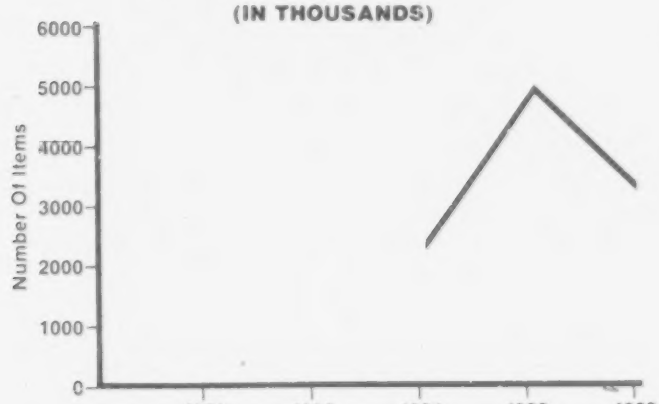
As banks continue to search for more profitable and productive means of providing noncredit services, check truncation activities can be expected to gain wider acceptance. Since the banking industry appears to be on the threshold of dramatic movement in this direction, the survey continues to measure the truncation statistics. Detail definition of each of the five types of truncation can be found in Appendix A.

In 1983, the responding banks indicated that they kept 3.3 million checks in safekeeping at the payor bank during the survey week (Figure 57) as compared to 4.9 million checks for the same period in 1982. The annual number of checks in safekeeping is actually higher than our survey data indicate for two primary reasons: First, the survey is a sample of one week. Second, one of the leading banks in check safekeeping did not participate in this year's survey.

Figure 57

CHECK SAFEKEEPING AT PAYOR BANK

(IN THOUSANDS)



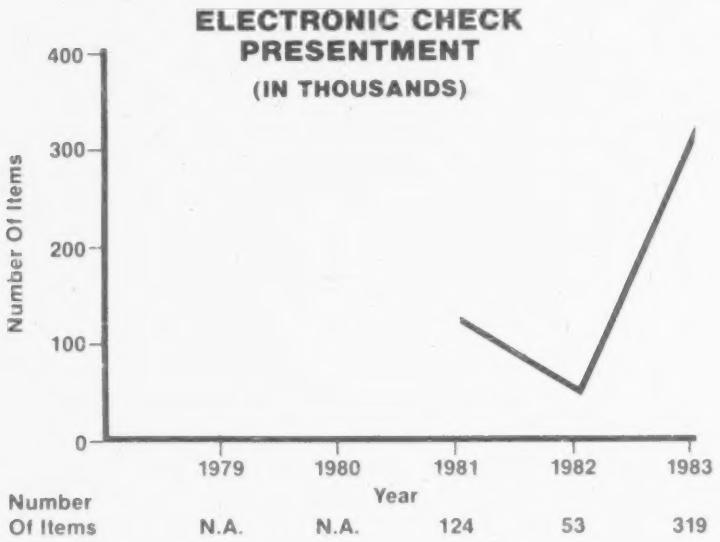
Number Of Items	1979	1980	1981	1982	1983
	N.A.	N.A.	2,321	4,916	3,255

As the trend in this area is analyzed in conjunction with not only the statistical data but other industry information and annouuncements, it is believed a dramatic increase in check safekeeping will occur in 1984, because two major banks have announced their intention to implement check safekeeping bankwide to both retail and commercial customers. In addition, several banks that have been offering check safekeeping to retail customers have indicated that they are ready to offer this service to corporate accounts.

An analysis of electronic check presentment revealed a fivefold increase in the number of items for the survey week (Figure 58). The increase to 319,000 items in 1983 from 53,000 items in 1982 is accounted for almost exclusively by one New York bank that reported zero items in 1982 and almost a quarter of a million items in 1983.

Additional information is provided in Table 62 of Appendix B.

Figure 58



Number Of Items	1979	1980	1981	1982	1983
	N.A.	N.A.	124	53	319

APPENDIX A
SURVEY QUESTIONNAIRE

1983
Check Collection Performance Measurement Survey

Bank Administration Institute
AN OPERATIONS & TECHNOLOGY GROUP PROJECT

INSTRUCTIONS

- Please report all data for the period beginning Monday, November 14, 1983, and ending Saturday, November 19, 1983. Place the appropriate date in the space provided at the top of each column in Section I.
- The Outstanding Exception Items, Section VIII, and the Comments, Section XII, should be completed at the end of the survey period.
- Please report data pertaining to your domestic banking operations, including branches, if applicable.
- Since you may be unable to answer all questions, please respond with "N.A." if the question does not apply to your bank's operation, or with a "zero" where appropriate.
- Please read all definitions before completing the survey.
- Mail the completed survey booklet to:

  Michael T. Curtiss
  Principal Research Manager
  Bank Administration Institute
  60 Gould Center
  Rolling Meadows, Illinois 60008

- If you have any questions, please call Michael T. Curtiss, Principal Research Manager, at (312) 228-6200.

BANK ADMINISTRATION INSTITUTE

Check Collection Performance Measurement Survey

AN OPERATIONS & TECHNOLOGY GROUP PROJECT

Date _____

Bank Name _____

Street Address _____

City _____ State _____ Zip _____

Name _____ Title _____
(of person to be contacted about survey date)

Address _____ Phone
(if different from above)

Name _____ Title _____
(of person to whom completed survey is to be returned, if different from above)

NUMBER OF ACCOUNTS

DDA	
Savings	
Money Market	
NOW	
Super NOW	

Number of Reader/sorters	
Number of Proof Machines	
Single Pocket	
Multiple Pocket	

DATA COLLECTION FORM

Please report all actual counts. Do *not* round off.

INCOMING WORK includes the check processing items received from the Federal Reserve, nonlocal banks, local banks and items included in all deposits made in your bank. Do *not* include the DDA items you process for other banks when you provide the accounting service on a fee basis. Do *not* include extra services performed over and above the check processing for lock box deposits, credit cards, preauthorized payments, account reconcilement, or wire transfer.

ITEMS consist of cashed and deposited checks, deposit tickets, control tickets, and other items that are normally processed commingled with checks on proof and/or encoding equipment. For batches use standard estimating techniques to determine item count.

I. INCOMING WORK

QUESTION	Question Relationship	Monday Date_____	Tuesday Date_____	Wednesday Date_____	Thursday Date_____	Friday Date_____	Saturday Date_____	WEEKLY TOTAL
1. Number of amount encoded items received from other banks and customers who do their own encoding sent to the reader/sorter.	—							1.
2. Number of amount encoded items received from other banks and customers who do their own encoding *not* sent to the reader/sorter.	—							2.
3. Number of items your bank encoded on single-pocket machines sent to the reader/sorter.	—							3.
4. Number of items your bank encoded on single-pocket machines *not* sent to the reader/sorter.	—							4.
5. Number of items your bank encoded on multipocket machines sent to the reader/sorter.	—							5.
6. Number of items your bank encoded on multipocket machines *not* sent to the reader/sorter.	—							6.
7. Number of first-pass items processed on the reader/sorter.	1+3+5=7							7.
8. Number of items that were *not* processed by the reader/sorter.	2+4+6=8							8.
9. Number of items received by your bank.	7+8=9							9.

Please report all actual counts. Do not round off.

OUTGOING WORK is the disposition of all items you received and processed today.

TRANSIT ITEMS are the items you processed both high speed and low speed that were "on-others."

TRANSIT HOLDOVERS—items received by your bank prior to a deadline but which were not processed by high-or-low-speed systems in time to be sent for collection at that deadline. These would result in a loss of float to the bank but not to its customer. Do not add today's holdover items to the next day's count.

ON-US ITEMS—those items drawn on your bank, includes all types of checking accounts, cashier checks, deposit tickets, and control tickets.

ON-US ITEMS HELD OVER—items received by your bank that were not processed in time to be posted to your accounts on the day they were received.

BULK FILE ITEMS—those items stored in bundles according to date paid within the statement cycle.

II. OUTGOING WORK

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
10. Total number of transit items (on others) sent.	—							**10.**
11. Total number of transit holdover (on other) items.	—							**11.**
12. Total number of on-us items paid and filed (from previous day's incoming work).	—							**12.**
13. Total number of on-us items held over.	—							**13.**
14. Total number of payable-thru drafts processed.	—							**14.**
15. Total number of items bulk filed.	—							**15.**
16. Total number of items processed today.	10+11+12+13+14+15=16							**16.**
17. Total dollar value of items in No. 11.	—	$	$	$	$	$	$	$ **17.**

III. TRANSIT RETURNS

TRANSIT RETURN—items returned today for any reason that were originally sent out as transit items from this bank.

NOTE: Due to rounding, estimating, and so on, the weekly totals for questions 9 and 16 may not balance, but they should approximate each other.

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
18. Total number of return items today.	—							**18.**
19. Total dollar value of items in No. 18.	—	$	$	$	$	$	$	$ **19.**

ITEMS MICROFILMED—total count of all check processing items filmed today.

Please report all actual counts. Do *not* round off.

IV. ITEMS MICROFILMED

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
20. Total number of items filmed prior to reader/sorter processing.	—							**20.**
21. Total number of items filmed after reader/sorter processing.	—							**21.**
22. Total number of items filmed during reader/sorter processing.	—							**22.**
23. Total number of items microfilmed today.	20+21+22 =23							**23.**

REJECTS—are items rejected for any reason on the first pass through a MICR reader/sorter.

HIGH-SPEED REJECT REENTRY—is the recapture of items rejected for any reason on the first pass through a MICR reader/sorter by repassing the items.

V. REJECTS

QUESTION	Question Relationship	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
24. Total number because of transit number only.	—							**24.**
25. Total number because of account number only.	—							**25.**
26. Total number because of dollar amount only.	—							**26.**
27. Total number because of serial number only.	—							**27.**
28. Total number because of trancode only.	—							**28.**
29. Total number due to other reasons (unknown or multiple reasons).	—							**29.**
30. Total number of first-pass MICR rejects before high-speed reject reentry.	24+25+26 +27+28+29 =30							**30.**
31. Total number of first-pass MICR rejects remaining after high-speed reject reentry.	—							**31.**

32. Do you repair rejected items before high-speed reject reentry? (circle one) 1 No 2 Yes

EXCEPTION ITEMS—items or notification of items (such as debits, credits or inquiries) that may require reconcilement with other banks.

MISSENDS—items you missent or received from other banks that did not belong to you.

MISCODES (Encoding Errors)—dollar amount miscoded items you sent or received from other banks.

LISTING ERRORS (Incorrectly Charged)—items listed for an amount different from the written amount that you sent or received from other banks.

FREE—items received but not listed on incoming cash letters. (Enclosed not listed.)

LOST—items listed on the incoming cash letter but not received. (Listed not enclosed.)

Please report all actual counts. Do *not* round off.

VI. EXCEPTION ITEMS

QUESTION	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		WEEKLY TOTAL	
	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved
33./34. Missends													33.	34.
35./36. Miscodes (Encoding Errors)													35.	36.
37./38. Listing Errors (Incorrectly Charged)													37.	38.
39./40. Free													39.	40.
41./42. Lost													41.	42.
43./44. Total exception items today 33+35+37+39+41=43 34+36+38+40+42=44	43.	44.	43.	44.	43.	44	43.	44.	43.	44.	43.	44.	43.	44.
45. Total dollar value of items in No. 43	$		$		$		$		$		$		$ 45.	
46. Total dollar value of items in No. 44	$		$		$		$		$		$		$ 46.	

LABOR MAN-HOURS—number of clerical and supervisory man-hours worked to complete each labor category listed. Separate estimated production from supervisory man-hours when appropriate for working supervisor. Include general force man-hours used in appropriate labor categories listed.

MAN-HOURS—productive hours, not time card hours, spent by department employees in completing the following tasks:

EXCEPTION ITEM MAN-HOURS—number of man-hours spent in discovering/resolving exception items for the calendar day.

PREPARATION MAN-HOURS—number of man-hours spent in receiving, batching, performing quality control, and preproving incoming deposits.

ENCODING OPERATOR MAN-HOURS—number of man-hours spent encoding the items received by your bank that were not encoded.

READER/SORTER OPERATOR MAN-HOURS—number of man-hours spent processing first pass items on the reader/sorter.

MICROFILM OPERATOR MAN-HOURS—number of man-hours spent microfilming the check processing items.

DATA CONTROL MAN-HOURS—consists of making MICR corrections or substitutions, preparing other entries for high-speed processing, controlling the movement of batches of items into and out of high-speed processing areas, balancing the transit and DDA entry runs, and preparing of daily settlement figures for departments involved in processing checks.

RETURN MAN-HOURS—number of man-hours spent in processing items returned to your bank that you had originally sent out as on-others items.

PAYING AND FILING MAN-HOURS—consists of processing "on-us" items, including the capture of MICR data preparing daily transaction files, updating customer master files, sorting paper documents, statement printing, management reports, verification of signature, date holds, stop payments, check filing, and statement rendering.

BULK FILING PRODUCTIVITY—number of man-hours spent in the capture of "on-us" MICR data, preparing daily transaction files, updating customer master files, cycle sorting daily on-us items for storage, retrieving and fine sorting cycle-to-date paper items, verifying stop payments, date holds and suspects, statement printing, and statement rendering.

CASH LETTER MAKE-UP MAN-HOURS—consists of processing outgoing ("on-others") items on computer and/or reader/sorter equipment, including the printing of cash letters, the fine sorting of items by destination, and the assembly and dispatch of these items, including any manual processing of quick kills and reader/sorter rejects.

VII. LABOR MAN-HOURS

QUESTION	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		WEEKLY TOTAL	
	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
47./48. Total number of nonofficer man-hours to process the exception items in Nos. 43 and 44.													47.	48.
49./50. Total data control man-hours to process the items in No. 9.													49.	50.
51./52. Total single-pocket encoding operator man-hours to process the items in Nos. 3 and 4.													51.	52.
53./54. Total preparation man-hours to process the items in No. 9.													53.	54.
55./56. Total multipocket encoding operator man-hours to process the items in Nos. 5 and 6.													55.	56.
57./58. Total reader/sorter man-hours to process the items in No. 7.													57.	58.
59./60. Total operator man-hours for cash letter makeup in Nos. 10 and 11.													59.	60.
61./62. Total microfilm operator man-hours to process the items in Nos. 20 and 21.													61.	62.

VII. LABOR MAN-HOURS (continued)

QUESTION	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		WEEKLY TOTAL	
	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
63./64. Total paying and filing man-hours to process the items in Nos. 12, 13, and 14.													**63.**	**64.**
65./66. Total bulk filing man-hours to process the items in No. 15.													**65.**	**66.**
67./68. Total man-hours to process return items in No. 18.													**67.**	**68.**
69. All other nonofficer man-hours used in check processing not reported in Nos. 47 to 68.	Hours Description Hours Description Hours Description **69.** Total		Hours Description Hours Description Hours Description **69.** Total		Hours Description Hours Description Hours Description **69.** Total		Hours Description Hours Description Hours Description **69.** Total		Hours Description Hours Description Hours Description **69.** Total		Hours Description Hours Description Hours Description **69.** Total		**69.**	
									70. Total of questions 47 to 69				**70.** Grand Total	

PLEASE COMPLETE THE FOLLOWING AT THE END OF THE WEEK

VIII. OUTSTANDING EXCEPTION ITEMS

NOTE: In order to obtain an accurate description of total exception dollars, please report the summation of dollar value for all debit and credit items outstanding. For example, if there are only two items over six months outstanding to report, a debit for $100 and a credit for $100, enter $200 on line 76 and enter 2 on line 82. If this is not possible, complete this section with "NA."

Total of Debit and Credit Outstanding Transit Exception Items	Part of Total Exception Items (Debit and Credit) That Have Been Outstanding for:				
	1 Month or Less	1-2 Months	2-4 Months	4-6 Months	Over 6 Months
71. $ _____ Amount	72. $ _____ Amount	73. $ _____ Amount	74. $ _____ Amount	75. $ _____ Amount	76. $ _____ Amount
77. _____ Items	78. _____ Items	79. _____ Items	80. _____ Items	81. _____ Items	82. _____ Items

Note: 71=72+73+74+75+76
77=78+79+80+81+82

83. Generally, our bank would: (circle one)

Always balance before items leave the bank, even if it means missing a transit deadline. **1**

Attempt to balance before the items leave the bank, but will make a transit deadline even if balancing is incomplete. **2**

Very seldom balance before the items leave the bank to make a transit deadline. **3**

84. Our bank's experience over the last year indicates that exception items have: (circle one)

	Why?
Grown **1**	_____
Remained about the same **2**	_____
Decreased **3**	_____

85. The staff responsible for making adjustments and reconciliations over the last year has:

*Number of People**	1982	1983
Grown **1**	86.	87.
Remained about the same **2**		
Decreased **3**		

**Number of full-time equivalent people.*
Express part-time people as fractional of full-time people.

NOTE: The productivity figures reported in this section should have been reported in the appropriate categories of earlier sections of the survey. This section should be completed if your bank utilizes on-line reject reentry techniques.

ON-LINE REJECT REENTRY—processing of items rejected from all first pass and subsequent passes of the MICR reader/sorter, using CRT or other automated devices to merge reject data directly to the MICR capture system.

ON-LINE REJECT REENTRY MAN-HOURS—making MICR corrections/substitutions through CRT or other automated device, controlling the movement of batches of items into and out of the high-speed processing job stream, balancing the transit and DDA reports, both first and subsequent passes, and providing daily settlement figures for all appropriate departments.

IX. ON-LINE REJECT REENTRY

QUESTION	Question Relationship	Weekly Total
88. Total number of reject items reentered on-line from first passes.	—	**88.**
89. Total number of reject items reentered on-line from subsequent passes.	—	**89.**
90. Total number of reject items reentered.	88+89=90	**90.**
91. Total man-hours to reenter reject items in No. 90.	—	**91.**

92. Do you repair rejected items that are reentered on-line from first or subsequent passes? (circle one) 1. No 2. Yes

X. AUTOMATED REJECT PROCESSING

NOTE: The productivity figures reported in this section should have been reported in the appropriate categories of earlier sections of the survey. This section should be completed if your bank utilizes a system of automated processing of reject items.

AUTOMATED REJECT PROCESSING—processing of all nonmachinable items, including items rejected by the MICR reader/sorter, on *both first pass and subsequent passes*, using automated equipment for repair and data capture.

AUTOMATED REJECT PROCESSING MAN-HOURS—preparing reject items for processing (including attaching strips), processing the rejects, and balancing output.

93. Is your bank using automated reject processing? (circle one)

1. No
2. Yes, exclusively
3. Yes, in combination with manual methods

94. If not, does your bank plan to acquire automated reject processing capability? (circle one)

1. No
2. Yes
3. Undecided

95. If your bank uses automated reject processing, is it accomplished? (circle one)

1. On-line?
2. Off-line?

96. If your bank uses automated reject processing, do you repair all fields, including account number? (circle one)

1. No
2. Yes
3. Yes, on selected banks
4. Yes, but only if operator intervention is not required.

QUESTION	Question Relationship	Weekly Total
97. Total number of all rejects processed through automated reject systems.	—	**97.**
98. Total number of all rejects processed through manual reject systems.	—	**98.**
99. Total number of MICR rejects processed.	97+98=99	**99.**
100. Total man-hours used to process reject items in No. 99.	—	**100.**

TRUNCATION AT THE BANK OF FIRST DEPOSIT—check flow is truncated at the location of first deposit, since payment information is transmitted by terminal entry to the bank's accounting system.

CHECK SAFEKEEPING AT PAYOR BANK—check flow is truncated after high-speed processing by the payor bank. Checks are not returned to customers, although check payment information is contained in a descriptive statement. Efficient item retrieval and image processing functions allow customer access to these items.

COOPERATIVE CHECK TRUNCATION—check flow is truncated after high-speed processing by the bank of first deposit. Payment information is forwarded to the payor bank by alternative means; for example, through the ACH. (Participants in the National Association for Check Safekeeping would report activity under this category.)

ELECTRONIC CHECK PRESENTMENT—check flow is not truncated, however, payment information is transmitted by electronic means to the payor bank, where checks are delivered later.

DATA PROCESSING SERVICE TRUNCATION—item flow is truncated at the bank providing safekeeping and data processing services, particularly share drafts or NOW drafts, for other financial institutions.

XI. CHECK TRUNCATION

QUESTION	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
101. Total number of on-us items truncated at the location of first deposit.							101.
102. Total number of on-us items for safekeeping at payor bank.							102.
103. Total number of transit items (on others) truncated in cooperative program.							103.
104. Total number of transit items (on others) transmitted for electronic check presentment.							104.
105. Total number of items (on-others) truncated as a part of data processing services provided.							105.
106. Total dollar value of items in No. 101.							106.
107. Total dollar value of items in No. 102.							107.
108. Total dollar value of items in No. 103.							108.
109. Total dollar value of items in No. 104.							109.
110. Total dollar value of items in No. 105.							110.

XII. COMMENTS

NOTE: The results of past BAI Check Collection Surveys have contained appendices devoted to commentary from the nation s check processing professionals. Please provide your comments so that this valuable forum can continue. How have conditions changed from last year? Attach a separate sheet if you need more space.

Personnel (Training and Turnover)

Transporation

Rejects (Rates and Handling)

Outstanding Exception Items

Returns and Adjustments

(over)

Automated Reject Processing

Equipment and Systems Problems

Security

Regulatory Impacts

Check Truncation (Safekeeping and Non-return)

Microcomputer Applications

Miscellaneous

APPENDIX B
SURVEY TABLES

Table 1

Survey Respondents by Geographic Area

Area*	All Reporting Banks 1979	1980	1981	1982	1983
Boston	9	12	10	11	6
New York	17	17	14	16	19
Philadelphia	22	24	18	16	15
Pittsburgh	5	5	5	5	4
Washington, D.C.	7	9	9	8	9
Atlanta	19	21	18	25	16
Chicago	8	11	12	12	11
Cleveland	11	11	13	11	6
Detroit	8	9	9	8	4
Minneapolis/St. Paul	0	0	5	4	5
St. Louis	9	10	11	12	9
Dallas	4	6	7	7	4
Houston	9	8	5	9	5
Los Angeles	9	10	7	10	11
San Francisco	11	11	9	11	10
Denver	5	5	5	5	4
Total banks	153	170	157	170	138

*The Outlook for the Nation's Check Payment System: 1970-1980, Arthur D. Little, Inc., Cambridge, Massachusetts, December, 1970.

Table 2

Percent of Rejects on Reader/Sorter Equipment by Area

Area	All Banks 1979	1980	1981	1982	1983
Boston	2.4%	2.1%	2.0%	1.6%	1.4%
New York	2.4	2.2	2.7	1.8	2.1
Philadelphia	1.9	1.9	2.3	2.1	1.7
Pittsburgh	1.9	1.8	1.9	1.4	1.3
Washington, D.C.	1.9	2.1	1.4	1.5	1.3
Atlanta	2.1	1.9	1.6	1.7	1.5
Chicago	2.1	1.7	1.8	1.8	1.4
Cleveland	2.2	1.9	1.8	1.7	1.5
Detroit	2.5	1.8	1.5	1.5	1.6
Minneapolis/St. Paul	*	*	1.8	1.2	1.1
St. Louis	2.0	2.0	1.7	1.4	1.2
Dallas	2.4	1.8	2.2	1.7	1.5
Houston	2.2	2.1	2.7	1.8	1.1
Los Angeles	2.1	2.0	1.5	1.6	1.5
San Francisco	2.3	1.6	1.7	1.1	1.1
Denver	1.7	1.7	1.8	1.2	1.2
Total banks	152	158	153	163	133
Average	2.1%	1.9%	1.7%	1.5%	1.5%

*No respondents.

$\frac{Q30}{Q7}$ X 100

Table 3

Distribution of the Reject Rate

Reject Rate	1979	1980	1981	1982	1983
0% - 1.0%	6	10	17	18	26
1.0% - 1.5%	26	38	40	61	61
1.5% - 2.0%	47	40	48	47	32
2.0% - 2.5%	33	38	21	26	8
2.5% - 3.0%	21	21	11	5	4
3.0% - 3.5%	7	11	9	2	1
3.5% - 4.0%	7	0	3	2	1
Over 4.0%	5	0	4	2	0
Total banks	152	158	153	163	133
Average	2.1	1.9	1.7	1.5	1.5
Median	2.0	1.8	1.7	1.5	1.4

$$\frac{Q30}{Q7} \times 100$$

Table 4

Percent of First-Pass Rejects by Type and by Area

Area	Transit Number*					Account Number					Dollar Amount≠				
	1979	1980	1981	1982	1983	1979	1980	1981	1982	1983	1979	1980	1981	1982	1983
Boston	27%	21%	14%	16%	13%	19%	20%	20%	15%	26%	44%	45%	40%	45%	39%
New York	19	19	14	16	11	19	15	15	16	29	40	39	30	33	38
Philadelphia	14	14	11	14	11	18	22	16	17	14	42	35	34	28	37
Pittsburgh	20	17	11	9	13	20	16	20	20	33	38	37	28	23	24
Washington, D.C.	29	27	13	20	19	19	15	21	19	19	40	34	23	28	26
Atlanta	20	16	19	19	20	21	17	20	15	20	35	40	33	32	30
Chicago	23	21	23	19	16	12	14	13	14	13	44	40	41	39	44
Cleveland	18	18	18	13	21	19	21	18	22	14	39	40	39	43	37
Detroit	18	18	18	9	11	22	17	20	19	13	35	45	35	32	38
Minneapolis/ St. Paul	*	*	17	14	10	*	*	13	11	9	*	*	31	46	39
St. Louis	16	18	16	19	17	9	10	10	12	12	47	47	41	37	43
Dallas	25	16	27	23	18	25	13	14	18	19	25	35	49	39	47
Houston	19	27	12	16	19	16	12	11	13	9	59	45	41	30	38
Los Angeles	19	16	26	16	20	23	23	30	26	20	36	43	28	36	32
San Francisco	18	13	12	9	17	19	15	19	8	13	36	39	40	31	35
Denver	17	22	21	14	13	16	16	26	18	25	45	45	26	36	36
Total banks	106	127	116	139	105										
Average	19.2%	18.6%	15.1%	15.3%	15.5%	18.5%	15.7%	16.3%	16.0%	19.5%	40.5%	41.5%	35.1%	34.0%	35.7%
Median	18.1%	17.1%	15.2%	14.3%	15.2%	19.3%	17.3%	17.8%	16.4%	19.1%	40.2%	39.5%	33.3%	34.6%	34.4%

*No respondents. $\frac{*Q24}{Q30} \times 100$ $\frac{+Q25}{Q30} \times 100$ $\frac{\neq Q26}{Q30} \times 100$

**No comparable data collected.

Table 4 (Continued)

Area	Serial Number-			Trancode Misread@			Other Reasons#				
	1981	1982	1983	1981	1982	1983	1979	1980	1981	1982	1983
Boston	4%	4%	8%	4%	4%	5%	10%	14%	17%	16%	11%
New York	3	3	5	7	5	4	21	27	31	26	13
Philadelphia	5	5	5	12	9	8	26	29	22	27	25
Pittsburgh	5	3	2	7	11	6	22	29	29	34	23
Washington, D.C.	3	3	5	12	8	10	13	24	23	21	21
Atlanta	6	4	4	6	7	8	24	27	16	23	18
Chicago	4	5	6	3	6	4	21	26	16	17	18
Cleveland	5	5	8	9	9	4	24	20	11	8	17
Detroit	3	4	9	3	3	2	25	21	20	33	27
Minneapolis/ St. Paul	2	3	3	10	9	5	*	*	27	17	34
St. Louis	4	3	6	10	6	7	28	25	18	22	15
Dallas	0	2	3	3	6	5	25	36	7	13	9
Houston	8	4	13	9	3	15	7	15	19	34	8
Los Angeles	4	6	5	6	8	10	21	18	6	8	14
San Francisco- Denver	3	2	5	7	4	8	27	33	18	46	21
	5	6	5	9	15	9	21	17	13	11	12
Average	4.8%	5.0%	5.3%	6.6%	6.8%	6.6%	21.9%	24.2%	22.2%	23.0%	17.3%
Median	3.1%	3.0%	4.0%	5.2%	5.0%	5.1%	20.6%	21.5%	13.0%	15.2%	14.9%

*No respondents $\frac{-Q27}{Q30} \times 100$ $\frac{@Q28}{Q30} \times 100$ $\frac{\#Q29}{Q30} \times 100$

**No comparable data collected.

Table 5

Transit Returns by Area
(Rate per 100,000 of Transit Items Sent)

Area	All Banks 1979	1980	1981	1982	1983
Boston	911.3	787.2	843.2	682.6	695.3
New York	1,310.4	904.3	908.6	946.2	803.1
Philadelphia	813.6	800.4	667.1	653.5	630.9
Pittsburgh	598.9	831.8	725.6	673.8	646.5
Washington, D.C.	1,070.3	1,138.4	865.7	930.5	715.4
Atlanta	1,298.9	1,046.6	1,028.2	1,117.5	987.6
Chicago	1,005.0	929.4	732.2	771.7	564.9
Cleveland	1,039.5	1,106.5	984.3	832.0	586.9
Detroit	1,320.6	966.9	1,067.5	819.3	844.0
Minneapolis/St. Paul	*	*	1,169.7	711.5	706.7
St. Louis	1,428.5	1,309.0	1,014.8	757.8	822.4
Dallas	1,530.1	867.7	1,293.5	1,131.7	662.6
Houston	1,308.2	1,474.5	1,651.6	1,287.9	1,013.7
Los Angeles	1,085.4	1,134.9	1,514.1	1,184.2	1,555.5
San Francisco	1,712.4	1,088.6	1,095.1	1,353.7	712.8
Denver	2,166.1	1,085.4	1,526.8	1,332.3	1,057.4
Total banks	146	165	149	164	134
Average	1,207.1	1,004.1	910.1	936.1	811.3

*No respondents.

$\frac{Q18}{Q10} \times 100{,}000$

Table 6

Distribution of the Transit Return Rate

Transit Return Rate	All Banks 1979	1980	1981	1982	1983
0 - 200	2	1	1	3	5
200 - 400	2	6	4	9	5
400 - 600	11	7	18	13	28
600 - 800	25	44	45	48	31
800 - 1,000	34	37	37	36	34
1,000 - 1,200	14	28	10	24	12
1,200 - 1,400	21	19	11	14	10
1,400 - 1,600	9	8	7	4	1
1,600 - 1,800	4	7	5	1	3
1,800 - 2,000	7	4	3	4	2
Over 2,000	17	4	8	8	3
Total banks	146	165	149	164	134
Average	1,207.1	1,004.1	910.1	936.1	811.3
Median	972.0	931.1	824.1	862.6	786.5

$$\frac{Q18}{Q10} \times 100{,}000$$

Table 7

Transit Return Dollar Value by Rate of Transit Returns

All Banks

Transit Returns per 100,000 Items Sent*	Number of Banks 1979	Number of Banks 1980	Number of Banks 1981	Number of Banks 1982	Number of Banks 1983	Average Dollar Value+ 1979	Average Dollar Value+ 1980	Average Dollar Value+ 1981	Average Dollar Value+ 1982	Average Dollar Value+ 1983
0 - 500	8	8	12	16	21	$ 679	$ 714	$737	$1,027	$992
500 - 1,000	66	87	93	93	79	555	705	614	671	669
1,000 - 1,500	40	50	25	39	23	1,102	583	717	501	735
1,500 - 2,000	15	16	11	8	4	365	1,023	801	795	562
Over 2,000	17	4	8	8	3	858	513	866	645	390
Total banks	146	165	149	164	130					
Average						$ 800	$ 813	$705	$ 678	$664
Median						$ 409	$ 496	$528	$ 511	$549

* $\frac{Q18}{Q10}$ X 100,000

\+ $\frac{Q19}{Q18}$

Table 8

Free and Lost Items Discovered by Area
(Rate per 100,000 Incoming Items)

Area	All Banks 1979	1980	1981	1982	1983
Boston	11.9	10.2	11.5	10.2	6.1
New York	28.7	14.6	20.3	14.2	14.2
Philadelphia	8.2	13.3	29.8	14.5	14.1
Pittsburgh	9.3	15.7	12.1	14.2	15.7
Washington, D.C.	18.5	26.5	23.1	19.0	8.8
Atlanta	20.6	26.2	16.1	10.3	13.9
Chicago	12.2	14.7	16.5	16.2	10.2
Cleveland	25.3	23.1	33.0	19.4	10.9
Detroit	17.3	31.9	22.4	44.6	36.2
Minneapolis/St. Paul	*	*	36.9	18.7	13.1
St. Louis	25.9	31.9	25.6	30.5	10.5
Dallas	52.6	16.9	15.2	17.6	13.5
Houston	21.0	24.3	24.5	10.4	9.5
Los Angeles	48.4	18.7	37.2	22.2	22.6
San Francisco	26.3	19.6	15.5	21.2	5.0
Denver	18.1	10.6	10.5	8.8	6.7
Total banks	148	165	143	166	131
Average	21.7	19.6	18.8	14.6	11.1
Median	13.9	13.4	15.0	11.0	8.8

*No respondents.

$$\frac{Q39 + Q41}{Q1 + Q2} \times 100{,}000$$

Table 9

Free Items Discovered by Area
(Rate per 100,000 Incoming Items)

Area	All Banks 1979	1980	1981	1982	1983
Boston	3.3	4.1	3.6	4.6	2.4
New York	6.4	7.2	7.5	5.0	5.6
Philadelphia	3.5	4.8	4.7	8.1	6.6
Pittsburgh	3.4	3.4	3.0	4.0	4.7
Washington, D.C.	7.5	8.2	13.0	9.2	3.5
Atlanta	7.8	10.9	6.9	3.8	5.1
Chicago	4.0	6.3	6.4	8.2	3.4
Cleveland	7.1	8.1	9.3	6.3	4.3
Detroit	16.3	6.1	6.0	6.9	14.8
Minneapolis/St. Paul	*	*	14.2	7.0	5.5
St. Louis	12.4	15.4	10.6	11.8	4.8
Dallas	23.5	6.6	8.8	7.1	5.9
Houston	6.4	8.8	15.1	3.9	4.4
Los Angeles	40.4	4.7	17.7	6.9	7.7
San Francisco	7.5	5.2	4.4	8.3	1.7
Denver	10.1	4.8	5.0	3.1	1.9
Total banks	148	165	143	166	131
Average	8.9	7.7	7.8	5.9	4.3
Median	4.1	4.6	4.3	3.4	2.9

*No respondents.

$$\frac{Q39}{Q1 + Q2} \times 100{,}000$$

Table 10

Lost Items Discovered by Area
(Rate per 100,000 Incoming Items)

Area	All Banks 1979	1980	1981	1982	1983
Boston	8.5	6.0	7.9	5.6	3.7
New York	22.4	7.4	12.8	9.2	8.5
Philadelphia	4.7	8.5	25.1	6.5	7.5
Pittsburgh	5.9	12.3	9.0	10.2	11.0
Washington, D.C.	11.0	18.3	10.1	9.7	5.3
Atlanta	12.8	15.3	9.2	6.5	8.8
Chicago	8.2	8.4	10.1	8.0	6.8
Cleveland	18.2	15.0	23.7	13.2	6.6
Detroit	11.9	25.7	16.4	37.8	21.4
Minneapolis/St. Paul	*	*	22.7	11.6	7.7
St. Louis	13.5	16.5	15.0	18.7	5.6
Dallas	29.1	10.3	6.4	10.5	7.6
Houston	14.6	15.5	9.4	6.4	5.0
Los Angeles	8.0	14.0	19.5	15.2	14.9
San Francisco	18.8	14.3	11.0	12.9	3.4
Denver	7.9	5.7	5.5	5.8	4.8
Total banks	148	165	143	166	131
Average	12.9	11.9	11.0	8.6	6.8
Median	8.6	8.1	9.0	7.0	5.5

*No respondents.

$$\frac{Q41}{Q1 + Q2} \times 100{,}000$$

Table 11

Distribution of the Free and Lost Items Rate

Rate	All Banks 1979	1980	1981	1982	1983
0 - 5	21	29	22	30	32
5 - 10	37	40	31	46	42
10 - 15	23	20	19	26	17
15 - 20	14	13	13	16	15
20 - 25	13	14	16	16	7
25 - 30	7	8	12	10	10
30 - 35	6	13	6	6	3
35 - 40	7	8	2	5	1
40 - 45	6	6	7	2	0
45 - 50	4	3	2	0	0
50 - 100	8	11	10	8	3
Over 100	2	0	3	1	1
Total banks	148	165	143	166	131
Average	21.7	19.6	18.8	14.6	11.1
Median	13.9	13.4	15.0	11.0	8.8

$$\frac{Q39 + Q41}{Q1 + Q2} \times 100{,}000$$

Table 12

Missent, Miscoded, and Listing
Error Items Discovered by Area
(Rate per 100,000 Transit Items Sent)

Area	All Banks 1979	1980	1981	1982	1983
Boston	9.5	24.0	29.3	15.0	10.0
New York	47.2	23.4	24.3	20.6	18.1
Philadelphia	18.4	29.6	16.2	17.6	15.4
Pittsburgh	9.5	15.4	13.4	11.2	10.7
Washington, D.C.	17.7	16.1	14.4	15.1	7.7
Atlanta	26.1	20.9	16.4	11.6	12.6
Chicago	12.9	10.0	15.8	14.4	13.0
Cleveland	15.7	17.8	21.5	16.4	13.4
Detroit	17.4	20.0	17.4	13.3	14.7
Minneapolis/St. Paul	*	*	33.9	18.9	17.0
St. Louis	12.4	14.1	13.8	14.2	11.8
Dallas	53.7	24.1	9.6	17.3	11.6
Houston	20.3	32.8	32.3	21.2	18.3
Los Angeles	25.2	31.0	25.8	13.3	10.8
San Francisco	30.1	22.6	23.3	17.6	7.5
Denver	14.4	12.9	5.7	9.5	28.3
Total banks	149	168	143	165	132
Average	23.0	18.6	16.6	13.9	12.7
Median	13.4	14.9	13.0	11.7	13.3

*No respondents.

$$\frac{Q33 + Q35 + Q37}{Q10} \times 100{,}000$$

Table 13

Missent Items Discovered by Area
(Rate per 100,000 Transit Items Sent)

Area	All Banks 1979	1980	1981	1982	1983
Boston	2.4	15.2	20.2	8.0	4.9
New York	34.0	14.6	11.6	10.0	8.2
Philadelphia	10.3	19.4	3.7	4.3	4.8
Pittsburgh	2.2	2.4	4.0	2.0	0.7
Washington, D.C.	9.5	5.1	4.6	5.7	0.8
Atlanta	9.1	5.1	3.8	4.8	3.8
Chicago	5.3	2.8	8.0	5.8	2.0
Cleveland	6.8	4.4	10.4	5.4	4.5
Detroit	12.6	10.4	9.6	3.5	3.2
Minneapolis/St. Paul	*	*	7.2	8.5	2.3
St. Louis	2.8	3.1	2.7	2.1	3.4
Dallas	40.3	16.1	4.0	6.7	2.6
Houston	15.1	25.5	24.2	7.2	8.3
Los Angeles	20.8	20.1	15.6	6.6	4.0
San Francisco	20.9	12.2	13.7	10.8	1.7
Denver	6.6	4.8	2.2	4.6	22.9
Total banks	149	168	143	165	131
Average	13.5	7.9	6.5	5.0	4.2
Median	3.6	4.2	3.9	3.0	2.5

*No respondents.

$$\frac{Q33}{Q10} \times 100{,}000$$

Table 14

Miscoded Items Discovered by Area
(Rate per 100,000 Transit Items Sent)

Area	All Banks 1979	1980	1981	1982	1983
Boston	6.0	6.1	6.9	3.7	3.1
New York	9.3	4.7	9.4	5.6	7.0
Philadelphia	5.2	5.8	8.3	7.8	7.2
Pittsburgh	5.8	7.7	7.3	6.6	7.4
Washington, D.C.	5.4	6.6	7.2	5.8	4.5
Atlanta	8.4	8.6	7.0	4.5	5.7
Chicago	4.4	4.6	4.3	5.8	8.3
Cleveland	4.8	6.6	5.8	5.8	5.9
Detroit	2.6	3.5	3.0	5.2	2.8
Minneapolis/St. Paul	*	*	8.2	7.2	9.5
St. Louis	5.9	4.0	3.6	4.9	3.0
Dallas	4.0	3.4	3.0	6.6	4.1
Houston	1.9	3.6	4.0	5.6	4.6
Los Angeles	3.0	7.4	6.9	4.2	4.5
San Francisco	11.8	6.7	6.6	4.2	3.9
Denver	3.2	4.2	3.1	3.5	4.7
Total banks	150	169	146	166	132
Average	7.7	6.0	6.4	5.3	5.5
Median	4.1	4.7	4.3	4.3	5.0

*No respondents.

$$\frac{Q35}{Q10} \times 100{,}000$$

Table 15

Listing Error Items Discovered by Area
(Rate per 100,000 Transit Items Sent)

Area	All Banks 1979	1980	1981	1982	1983
Boston	1.1	2.7	2.2	3.3	2.1
New York	3.9	4.0	3.4	5.0	2.9
Philadelphia	2.9	4.4	4.2	5.4	3.4
Pittsburgh	1.5	5.2	2.2	2.7	2.6
Washington, D.C.	2.7	4.4	2.7	3.5	2.4
Atlanta	8.6	6.8	5.7	2.2	3.1
Chicago	3.2	2.6	3.5	2.5	2.6
Cleveland	4.2	6.8	5.4	5.3	2
Detroit	2.2	6.1	4.7	4.6	8.7
Minneapolis/St. Paul	*	*	18.5	3.2	5.2
St. Louis	3.8	7.0	7.5	7.3	5.4
Dallas	9.4	4.7	2.7	4.0	5.0
Houston	3.3	3.7	4.1	8.4	5.4
Los Angeles	1.3	3.6	3.1	2.5	2.2
San Francisco	3.1	3.7	2.7	2.6	1.9
Denver	4.5	4.0	0.4	1.5	0.7
Total banks	150	169	144	166	132
Average	3.9	4.3	3.8	3.6	3.1
Median	2.0	2.4	2.1	2.1	2.4

*No respondents.

$\frac{Q37}{Q10}$ X 100,000

Table 16

Distribution of Missent, Miscoded, and Listing Error Items Rate

Rate	All Banks 1979	1980	1981	1982	1983
0 - 5	26	20	16	30	19
5 - 10	35	38	32	36	30
10 - 15	21	26	31	34	34
15 - 20	17	23	18	19	21
20 - 25	15	17	13	20	9
25 - 30	8	15	8	11	5
30 - 35	3	6	7	5	6
35 - 40	5	4	5	3	1
40 - 45	2	4	3	0	1
45 - 50	2	0	3	3	1
50 - 100	11	13	6	4	2
100 - 200	3	1	1	0	2
Over 200	1	1	0	0	1
Total banks	149	168	143	165	132
Average	23.0	18.6	16.6	14.0	12.7
Median	13.4	14.9	13.0	11.7	13.3

$$\frac{Q33 + Q35 + Q37}{Q10} \times 100{,}000$$

Table 17

Exception and Return Items Discovered by Area
(Rate per 100,000 Transit Items Processed)

Area	All Banks 1979	1980	1981	1982	1983
Boston	934.3	884.5	883.1	709.1	713.6
New York	1,383.5	902.4	939.9	982.4	842.4
Philadelphia	856.0	843.6	718.6	685.8	657.3
Pittsburgh	619.7	863.1	753.1	702.1	675.3
Washington, D.C.	1,104.5	1,172.5	904.9	964.8	732.3
Atlanta	1,351.1	1,240.4	1,056.0	1,140.4	1,032.5
Chicago	1,032.1	957.0	766.1	802.8	589.0
Cleveland	1,082.5	1,151.6	1,095.9	871.4	610.7
Detroit	1,371.5	895.5	1,185.8	853.9	900.7
Minneapolis/St. Paul	*	*	1,422.3	746.5	741.3
St. Louis	1,465.7	1,353.0	1,053.5	801.6	844.9
Dallas	1,650.6	910.3	1,288.2	1,168.2	691.3
Houston	1,346.5	1,533.7	1,250.8	1,320.4	1,050.2
Los Angeles	1,160.8	1,194.3	1,767.3	1,221.0	1,608.1
San Francisco	1,932.9	1,276.3	1,158.6	1,397.2	729.2
Denver	2,200.4	1,111.8	1,542.6	1,352.5	1,092.4
Total banks	144	167	143	164	131
Average	1,266.2	1,062.2	959.4	967.3	837.3

*No respondents.

$$\frac{Q18 + Q43}{Q10} \times 100{,}000$$

Table 18

Distribution of the Exception and Return Items Rate

Rate	All Banks 1979	1980	1981	1982	1983
0 - 250	2	4	2	2	5
250 - 500	5	4	6	13	14
500 - 750	17	23	32	39	36
750 - 1,000	45	55	51	50	42
1,000 - 1,250	18	44	22	30	15
1,250 - 1,500	21	12	11	14	10
1,500 - 1,750	9	11	7	4	3
1,750 - 2,000	10	6	3	4	3
2,000 - 2,500	9	5	4	5	1
Over 2,500	8	3	5	3	2
Total banks	144	167	143	164	131
Average	1,266.2	1,062.2	959.4	967.3	837.3
Median	1,044.5	969.0	865.0	891.8	795.6

$$\frac{Q18 + Q43}{Q10} \times 100{,}000$$

Table 19

Percent of Exceptions, Returns, and
Rejects to the Number of Items Purchased

Area	All Banks 1979	1980	1981	1982	1983
Boston	2.5%	2.6%	2.4%	2.0%	1.9%
New York	3.4	2.6	2.7	2.2	2.7
Philadelphia	2.3	2.3	2.8	2.5	2.1
Pittsburgh	1.9	1.8	1.8	1.4	1.6
Washington, D.C.	2.6	2.6	1.8	1.9	1.5
Atlanta	3.0	2.6	2.2	2.4	1.8
Chicago	2.8	2.5	2.3	2.4	1.9
Cleveland	2.9	2.7	2.2	2.0	1.8
Detroit	3.2	2.7	2.9	2.2	2.2
Minneapolis/St. Paul	*	*	3.8	1.8	1.7
St. Louis	3.0	2.8	2.4	2.0	1.9
Dallas	3.3	2.4	3.1	2.4	2.1
Houston	3.0	3.8	4.4	2.5	2.5
Los Angeles	2.8	2.1	2.2	2.3	2.2
San Francisco	3.6	2.2	2.5	1.6	1.3
Denver	3.2	2.4	2.3	2.3	1.9
Total banks	144	155	140	158	126
Average	2.9%	2.4%	2.4%	2.0%	1.9%
Median	2.7%	2.6%	2.5%	2.0%	1.9%

*No respondents.

$$\frac{Q30 + Q18 + Q43}{Q16} \times 100$$

Table 20

Distribution of Exceptions, Returns, and Reject Rate

Rate	1979	1980	1981	1982	1983
0% - 1.5%	6	15	20	31	34
1.5% - 2.0%	16	24	34	45	42
2.0% - 2.5%	37	37	34	40	33
2.5% - 3.0%	34	42	28	24	6
3.0% - 3.5%	20	21	9	8	6
3.5% - 4.0%	12	8	5	5	5
4.0% - 4.5%	8	4	2	2	0
4.5% - 5.0%	5	1	1	0	0
Over 5.0%	6	3	7	3	0
Total banks	144	155	140	158	126
Average	2.9	2.4	2.4	2.0	1.9
Median	2.7	2.6	2.5	2.0	1.9

$$\frac{Q30 + Q18 + Q43}{Q16} \times 100$$

Table 21

Return and Exception Item Dollar Analysis by Area

Area	Return Items: Total $ Discovered[1]	Return Items: Average $ Value/ Item[2]	Exception Items: Discovered: Total $[3]	Exception Items: Discovered: Average $ Value/ Item[4]	Exception Items: Resolved: Total $[5]	Exception Items: Resolved: Average $ Value/ Item[6]
Boston	$ 49,467,886	$ 618	$ 18,605,974	$ 7,805	$ 34,305,766	$10,168
New York	276,614,437	1,098	272,670,052	24,772	485,401,241	57,827
Philadelphia	91,666,723	717	93,240,152	17,366	35,617,408	10,680
Pittsburgh	40,650,310	906	8,927,278	4,475	8,462,463	4,645
Washington, D.C.	64,858,060	522	25,652,660	8,755	34,663,483	17,092
Atlanta	99,327,284	427	43,303,874	7,474	39,963,170	7,485
Chicago	133,226,219	987	696,860,305	121,099	697,534,053	142,558
Cleveland	21,188,714	480	10,392,186	4,072	12,447,976	5,914
Detroit	14,324,338	631	6,456,297	3,887	5,972,446	5,754
Minneapolis/ St. Paul	46,159,784	821	47,273,228	28,790	54,444,054	38,668
St. Louis	76,302,321	506	27,356,661	9,011	20,610,486	7,891
Dallas	69,900,976	677	95,285,804	21,322	78,102,015	23,783
Houston	84,437,471	1,264	14,373,173	5,971	22,763,860	13,336
Los Angeles	147,955,932	444	20,347,430	3,323	19,338,602	3,728
San Francisco	143,245,306	539	70,550,821	12,304	69,357,620	13,576
Denver	41,303,936	598	9,840,717	5,491	9,729,797	5,764
Total 130 Banks	$1,400,629,700	-	$1,460,956,612	-	$1,628,714,440	-
1983 Average 130 Banks	$ 10,774,075	$ 664	$ 11,503,595	$22,599	$ 12,824,523	$30,544
1982 Average 165 Banks	10,924,578	675	14,278,119	25,901	14,875,017	34,048
1981 Average 149 Banks	10,103,692	705	22,933,134	36,792	25,397,210	$50,149
1980 Average 165 Banks	11,257,764	813	12,019,983	19,262	11,423,479	23,885
1979 Average 149 Banks	13,476,748	727	9,396,938	14,802	7,242,381	18,747
1983 Median 130 Banks	$ 4,543,998	$ 549	$ 1,107,238	$ 3,382	$ 870,140	$ 3,512
1982 Median 165 Banks	4,670,104	510	1,532,534	4,166	836,486	3,756
1981 Median 149 Banks	4,440,672	528	1,371,062	3,496	1,175,195	3,913
1980 Median 165 Banks	4,363,116	496	1,116,643	3,350	817,788	3,448
1979 Median 149 Banks	3,765,978	409	723,152	2,968	662,562	2,970

[1]Q19 [2]Q19 ÷ Q18 [3]Q45 [4]Q45 ÷ Q43 [5]Q46 [6]Q46 ÷ Q44.

*No respondents.

Table 22

Age Distribution of Outstanding Exception Items

Dollars Outstanding

Months Outstanding	1979 144 Banks Dollars	1979 144 Banks Percent	1980 143 Banks Dollars	1980 143 Banks Percent	1981 124 Banks Dollars	1981 124 Banks Percent
0 - 1	$601,659,946	70.0%	$541,802,776	61.8%	$454,148,269	61.2%
1 - 2	156,719,650	18.2	171,240,399	19.5	165,448,452	22.3
2 - 4	57,975,289	6.8	85,763,209	9.8	68,630,665	9.2
4 - 6	29,496,372	3.4	43,450,668	5.0	24,743,939	3.3
Over 6	13,131,047	1.6	34,629,413	3.9	29,250,333	3.9
Total	$859,982,204	100.0%	$876,886,465	100.0%	$742,221,658	100.0%

Items Outstanding

Months Outstanding	1979 144 Banks Items	1979 144 Banks Percent	1980 143 Banks Items	1980 143 Banks Percent	1981 124 Banks Items	1981 124 Banks Percent
0 - 1	104,396	29.9%	88,122	22.8%	80,200	29.1%
1 - 2	87,499	25.2	81,215	21.0	70,395	25.6
2 - 4	70,537	20.2	88,346	22.9	60,030	21.8
4 - 6	46,421	13.3	65,120	16.9	32,134	11.7
Over 6	39,914	11.4	63,320	16.4	32,575	11.8
Total	348,767	100.0%	386,123	100.0%	275,334	100.0%

Table 22 (Continued)

Dollars Outstanding

Months Outstanding	1982 144 Banks Dollars	Percent	1983 121 Banks Dollars	Percent
0 - 1	$463,171,271	75.9%	$459,756,255	81.0%
1 - 2	63,630,792	10.4	50,338,707	8.9
2 - 4	33,375,661	5.5	32,344,502	5.7
4 - 6	17,472,913	2.9	15,138,992	2.7
Over 6	32,577,625	5.3	9,713,310	1.7
Total	$610,228,262	100.0%	$567,291,766	100.0%

Q71 = Q72 + Q73 + Q74 + Q75 + Q76

Items Outstanding

Months Outstanding	1982 144 Banks Items	Percent	1983 124 Banks Items	Percent
0 - 1	71,448	23.7%	80,284	31.0%
1 - 2	67,413	22.3	56,241	21.7
2 - 4	71,833	23.8	62,379	24.1
4 - 6	41,749	13.8	37,819	14.6
Over 6	49,590	16.4	22,370	8.6
Total	302,033	100.0%	259,093	100.0%

Q77 = Q78 + Q79 + Q80 + Q81 + Q82

Table 23

Age Distribution of Outstanding Exemption Items
by the Microfilming Method
(Average Reporting Banks)

	After* Reader/Sorter Processing						Before* Reader/Sorter Processing					
	1981 Dollars	1982 Dollars	1983 Dollars	1982 Percent	1982 Percent	1983 Percent	1981 Dollars	1982 Dollars	1983 Dollars	1981 Percent	1982 Percent	1983 Percent
0 - 1	$2,479,202	$ 833,657	$ 708,048	69%	77%	56%	$486,878	$1,559,068	$154,374	75%	80%	57%
1 - 2	813,553	85,793	338,247	23	8	27	65,636	8,883	37,354	10	10	14
2 - 4	239,532	130,929	153,908	6	12	12	58,571	17,660	37,879	9	6	14
4 - 6	23,729	19,152	54,361	1	2	4	16,823	5,513	13,124	3	2	5
Over 6	19,980	16,282	20,457	1	1	2	20,176	11,391	27,945	3	2	10
Total	$3,575,996	$1,085,813	$1,275,021	100%	100%	100%	$648,084	$1,602,515	$270,676	100%	100%	100%

Items Outstanding

	After Reader/Sorter Processing						Before Reader/Sorter Processing					
	1981 Items	1982 Items	1983 Items	1981 Percent	1982 Percent	1983 Percent	1981 Items	1982 Items	1983 Items	1981 Percent	1982 Percent	1983 Percent
0 - 1	590	669	435	44%	64%	35%	153	220	208	34%	45%	32%
1 - 2	380	236	355	29	23	28	77	93	166	17	19	26
2 - 4	282	68	181	21	7	15	81	92	88	18	18	14
4 - 6	35	36	147	3	3	12	76	53	71	17	11	11
Over 6	38	29	125	3	3	10	59	33	111	13	7	17
Total	1,325	1,038	1,243	100%	100%	100%	446	491	644	100%	100%	100%

*Criteria for inclusion in a group, i.e., After, Before, and During was changed in 1983 Survey.

Table 23 (Continued)

Dollars Outstanding

	1981 Dollars	1982 Dollars	1983 Dollars	During* Reader/Sorter Processing 1982 Percent	1982 Percent	1983 Percent
0 - 1	$4,014,921	$3,554,375	$4,055,849	70%	80%	81%
1 - 2	1,137,824	453,831	442,193	20	10	9
2 - 4	369,207	242,364	282,912	6	6	6
4 - 6	86,944	96,090	132,812	2	2	3
Over 6	125,049	72,038	83,485	2	2	2
Total	$5,733,945	$4,418,698	$4,998,251	100%	100%	100%

Items Oustanding

	1981 Items	1982 Items	1983 Items	During Reader/Sorter Processing 1981 Percent	1982 Percent	1983 Percent
0 - 1	722	494	675	34%	26%	31%
1 - 2	466	467	471	22	25	22
2 - 4	394	517	530	19	28	24
4 - 6	229	281	320	11	15	15
Over 6	292	116	183	14	6	8
Total	2,103	1,875	2,179	100%	100%	100%

*Criteria for inclusion in a group, i.e., After, Before, and During was changed in 1983 survey.

Table 24

A Comparison of Balancing Policy and Experience

Balancing Procedures

	1979	1980	1981	1982	1983
Always balance	5%	4%	3%	3%	4%
Attempt to balance	78	85	85	80	78
Very seldom balance	17	11	12	17	18

Exception Item Growth

	1979	1980	1981	1982	1983
Grown	67%	56%	49%	28%	30%
Remained the same	26	25	27	32	32
Decreased	7	19	24	40	38

Adjustment Staff Size

	138 Banks	1982	1983	Percent Gain or Loss
Grown	22%	692	764	+10.4%
Remained the same	43	529	529	0.0
Decreased	35	1,775	1,555	-12.4
Total	100%	2,996	2,848	-4.9%

Table 25

Transit Holdover by Area
(Percent of Total Transit Items)

Area	All Banks 1979	1980	1981	1982	1983
Boston	0.1%	1.1%	0.2%	0.1%	.04
New York	2.0	2.5	2.4	2.6	4.97
Philadelphia	2.0	1.5	0.3	0.1	.18
Pittsburgh	1.6	1.3	1.0	2.0	3.18
Washington, D.C.	1.9	0.9	0.7	0.4	.16
Atlanta	5.8	2.9	5.4	2.0	1.34
Chicago	4.7	1.4	1.1	2.8	.86
Cleveland	1.6	0.5	1.3	0.6	1.24
Detroit	1.1	0.7	0.4	9.6	3.61
Minneapolis/St. Paul	*	*	0.8	0.8	.01
St. Louis	2.9	2.3	1.7	1.2	0.74
Dallas	0.5	1.0	6.0	4.6	.07
Houston	7.3	3.3	2.4	2.4	0.42
Los Angeles	0.4	1.4	1.2	0.5	.88
San Francisco	1.3	1.9	0.4	0.4	0.21
Denver	0.5	0.2	0.4	0.6	0.40
Total banks	153	170	152	169	138
Average	2.5%	1.9%	1.4%	1.6%	1.19%

	1979	1980	1981	1982	1983
Average dollar value of item held over	$661	$678	$781	$408	$2,129
Median dollar value of item held over	$430	$551	$478	$413	$ 521

*No respondents.

$$\frac{Q11}{Q10 + Q11} \times 100$$

Table 26

Distribution of the Transit Holdover Rate
(Percent of Total Transit Items)

Rate	All Banks 1979	1980	1981	1982	1983
0% - 1%	93	112	105	127	114
1% - 2%	19	21	19	17	9
2% - 3%	9	13	5	7	4
3% - 4%	6	7	4	6	2
4% - 5%	3	3	7	0	4
5% - 10%	14	7	7	4	2
10% - 15%	5	2	2	4	1
15% - 20%	1	2	0	2	0
20% - 30%	1	3	1	0	1
Over 30%	2	0	2	2	1
Total banks	153	170	152	169	138
Average	2.5%	1.9%	1.4%	1.6%	1.2%
Median	0.5%	0.3%	0.2%	0.2%	0.1%

$$\frac{Q11}{Q10 + Q11} \times 100$$

Table 27

Overall Labor Productivity

Checks per Man-Hour	1979	1980	1981	1982	1983
Under 300	16	15	6	3	1
300 - 400	37	31	14	12	8
400 - 500	27	24	20	16	13
500 - 750	71	88	37	53	39
750 - 1,000	*	*	22	30	41
1,000 - 1,250	*	*	4	13	17
Over 1,250	*	*	2	7	16
Total banks	151	158	105	134	135
Average	530.0	524.6	551.6	693.3	787.5
Median	490.3	522.7	609.8	692.6	802.9

$$\frac{\text{Q16}}{\text{Sum of Q47 through Q69}}$$

*No comparable data collected.

Table 28

Overall Labor Productivity by Area

Area	All Banks 1979	1980	1981	1982	1983
Boston	566.1	559.1	680.1	689.0	794.2
New York	392.7	551.6	536.8	592.2	552.2
Philadelphia	587.7	465.1	612.4	735.0	786.4
Pittsburgh	661.5	771.2	788.3	974.8	969.7
Washington, D.C.	522.0	565.5	690.7	769.7	885.3
Atlanta	513.0	567.9	723.7	658.3	821.4
Chicago	548.1	505.2	584.9	662.3	763.9
Cleveland	480.3	517.5	493.0	700.6	944.0
Detroit	529.5	488.3	456.4	702.1	601.4
Minneapolis/St. Paul	*	*	733.3	874.9	1,075.8
St. Louis	542.4	613.3	689.7	797.4	806.6
Dallas	628.6	602.3	739.7	755.4	905.4
Houston	492.5	462.2	486.7	909.9	843.3
Los Angeles	641.6	634.0	529.5	595.7	691.0
San Francisco	508.4	670.9	727.7	1,042.4	978.3
Denver	516.9	624.8	414.2	769.8	782.1
Total banks	151	158	105	134	135
Average	530.0	524.6	551.6	693.3	787.5
Median	490.3	522.7	609.8	692.6	802.9

*No respondents

$$\frac{Q16}{\text{Sum of Q47 through Q69}}$$

Table 29

Distribution of Labor by Overall Labor Productivity

Checks per Man-Hour*	Number of Banks	Percent of Labor by Tasks** A	B	C	D	E	F	G	H	I
Under 300	1	4.0	36.4	6.3	1.1	2.7	30.8	9.4	0.0	9.4
300 - 400	8	15.5	23.5	13.7	6.1	7.6	10.5	5.6	0.7	17.0
400 - 500	13	12.5	32.3	9.7	3.7	5.6	18.3	5.7	1.3	11.7
500 - 750	39	15.7	29.5	6.8	4.5	7.5	18.2	5.8	4.3	8.4
750 - 1,000	41	13.2	23.0	5.9	5.4	6.2	29.6	9.0	4.3	7.6
1,000 - 1,250	17	15.6	29.0	7.5	4.4	10.2	18.3	8.5	2.6	5.0
1,250 - 1,500	9	15.6	34.9	12.9	5.8	6.9	16.4	7.0	4.3	1.7
Over 1,500	7	9.4	44.4	8.2	4.7	5.8	18.0	4.8	4.8	7.9
Average, all banks 1983	135	14.3	27.5	7.6	4.9	7.0	21.8	7.3	3.2	6.4
Average, all banks 1982	134	15.7	25.4	7.3	4.3	7.0	23.1	7.4	1.8	8.0
Average, all banks 1981	105	17.2	28.8	5.7	4.0	6.8	21.3	6.5	1.6	8.1
Average, all banks 1980	158	18.3	26.2	4.5	4.5	6.9	22.7	6.6	3.2	7.0
Average, all banks 1979	151	18.4	30.4	-	4.2	7.5	27.9	6.6	-	5.0

* $\frac{\text{Q16}}{\text{Sum of Q47 through Q69}}$; -No comparable data collected.

** Tasks

A. Data control balancing and correction — $\frac{\text{Q49 + Q50}}{\text{Sum of Q47 through Q69}} \times 100$

B. Encoding operations — $\frac{\text{Q51 + Q52 + Q55 + Q56}}{\text{Sum of Q47 through Q69}} \times 100$

C. Check receiving — $\frac{\text{Q53 + Q54}}{\text{Sum of Q47 through Q69}} \times 100$

D. Reader/sorter operations — $\frac{\text{Q57 + Q58}}{\text{Sum of Q47 through Q69}} \times 100$

E. Cash letter make-up and microfilming operations — $\frac{\text{Q59 + Q60 + Q61 + Q62}}{\text{Sum of Q47 through Q69}} \times 100$

F. On-us processing and return item processing — $\frac{\text{Q63 + Q64 + Q67 + Q68}}{\text{Sum of Q47 through Q69}} \times 100$

G. Exception item processing — $\frac{\text{Q47 + Q48}}{\text{Sum of Q47 through Q69}} \times 100$

H. Bulk filing — $\frac{\text{Q65 + Q66}}{\text{Sum of Q47 through Q69}} \times 100$

I. Non-officer processing time not including "A" through "H" tasks — $\frac{\text{Q69}}{\text{Sum of Q47 through Q69}} \times 100$

Table 30

Balancing and Correction Labor Productivity

Checks per Man-Hour	1979	1980	1981	1982	1983
Under 1,000	9	5	7	4	0
1,000 - 2,000	24	27	15	11	2
2,000 - 3,000	47	37	23	20	20
3,000 - 4,000	23	21	20	31	20
4,000 - 5,000	12	21	23	18	15
5,000 - 6,000	2	13	11	16	6
6,000 - 7,000	5	9	8	8	10
7,000 - 8,000	5	6	9	8	6
8,000 - 9,000	24	28	3	8	7
9,000 - 10,000	*	*	2	3	6
10,000 - 15,000	*	*	14	14	16
Over 15,000	*	*	12	19	19
Total banks	151	167	147	160	127
Average	2,455.9	2,880.4	3,218.2	4,651.0	9,180.5
Median	2,894.6	3,556.5	4,250.0	4,782.1	6,003.5
			$\frac{Q9}{Q49 + Q50}$		

*No comparable data collected.

Table 31

Encoding Labor Productivity

Checks per Man-Hour	Number of Banks 1979	1980	1981	1982	1983
Under 600	25	19	12	9	7
600 - 700	24	15	14	6	4
700 - 800	23	26	17	18	8
800 - 900	31	27	34	15	16
900 - 1,000	17	27	21	25	13
1,000 - 1,100	31	51	13	17	20
1,100 - 1,200	*	*	13	20	19
1,200 - 1,300	*	*	5	11	16
1,300 - 1,400	*	*	3	9	10
1,400 - 1,500	*	*	6	9	6
Over 1,500	*	*	11	14	13
Total banks	151	165	149	153	132
Average	859.1	864.7	875.6	988.4	1,007.5
Median	815.8	878.7	880.5	1,012.2	1,089.4

$$\frac{Q3 + Q4 + Q5 + Q6}{Q51 + Q52 + Q55 + Q56}$$

*No comparable data collected.

Table 32

Encoding Labor Productivity for the Single-Pocket Machine

Checks per Man-Hour	1979	1980	1981	1982	1983
Under 600	15	18	12	9	5
600 - 700	24	9	11	5	2
700 - 800	19	27	13	15	12
800 - 900	27	25	33	17	12
900 - 1,000	16	25	21	26	14
1,000 - 1,100	16	17	13	17	17
1,100 - 1,200	4	14	12	22	18
1,200 - 1,300	14	20	8	12	17
1,300 - 1,400	*	*	3	9	9
1,400 - 1,500	*	*	5	8	6
Over 1,500	*	*	12	14	12
Total banks	135	155	143	154	124
Average	881.4	863.9	919.7	1,002.7	1,043.2
Median	849.1	891.5	913.7	1,023.2	1,100.3
			$\frac{Q3 + Q4}{Q51 + Q52}$		

*No comparable data collected.

Table 33

Encoding Labor Productivity for the Multipocket Machine

Checks per Man-Hour	1979	1980	1981	1982	1983
0 - 100	3	3	3	3	2
100 - 200	4	6	2	3	4
200 - 300	5	4	2	4	5
300 - 400	6	5	2	4	9
400 - 500	3	6	9	3	2
500 - 600	4	9	3	6	3
600 - 700	6	6	3	4	2
700 - 800	9	7	10	7	4
800 - 900	8	7	7	7	7
900 - 1,000	0	4	4	7	6
1,000 - 1,100	1	1	2	4	1
1,100 - 1,200	1	2	2	4	2
Over 1,200	2	8	8	5	11
Total banks	52	68	57	61	58
Average	627.8	685.4	766.7	908.2	817.7
Median	610.2	616.2	727.7	764.1	757.6

$$\frac{Q5 + Q6}{Q55 + Q56}$$

Table 34

Items Encoded per Man-Hour by Percent of Pre-encoded Items

Percent of Incoming Items Already Encoded*	Number of Banks 1979	1980	1981	1982	1983
80% - 100%	11	16	19	19	19
60% - 80%	36	40	38	45	36
40% - 60%	52	60	58	67	51
0% - 40%	52	49	34	28	25
Total banks	151	165	149	165	131

Percent of Incoming Items Already Encoded*	Items Encoded per Man-Hour+ 1979	1980	1981	1982	1983
80% - 100%	652.2	776.0	818.5	1,067.5	906.4
60% - 80%	788.6	955.4	979.7	1,052.2	954.4
40% - 60%	868.5	1,040.7	1,412.7	1,045.6	1,025.9
0% - 40%	943.1	885.0	1,496.8	1,064.2	1,061.8
Average productivity	859.1	864.7	875.6	983.3	1,008.2

*$\frac{Q1 + Q2}{Q9} \times 100$

+ $\frac{Q3 + Q4 + Q5 + Q6}{Q51 + Q52 + Q55 + Q56}$

Table 35

Check Receiving Productivity

	Number of Banks			
	1980	1981	1982	1983
Under 5,000	41	27	30	14
5,000 - 10,000	44	30	34	31
10,000 - 15,000	34	21	31	27
15,000 - 20,000	11	30	22	17
20,000 - 25,000	12	9	12	11
25,000 - 30,000	3	7	10	9
Over 30,000	18	25	25	23
Total banks	163	149	164	132
Average	6,518.6	8,969.9	9,358.6	10,163.7
Median	9,112.7	14,331.3	12,331.2	13,779.7

$$\frac{Q9}{Q53 + Q54}$$

Table 36

Reader/Sorter Labor Productivity

Checks per Man-Hour	Number of Banks 1979	1980	1981	1982	1983
Under - 5,000	17	18	11	6	6
5,000 - 10,000	28	29	29	20	17
10,000 - 15,000	25	14	22	24	17
15,000 - 20,000	12	22	24	27	14
20,000 - 25,000	12	13	12	21	17
25,000 - 30,000	19	18	12	15	11
30,000 - 35,000	38	52	5	9	5
35,000 - 40,000	*	*	7	11	12
40,000 - 45,000	*	*	6	7	5
45,000 - 50,000	*	*	6	6	3
50,000 - 75,000	*	*	13	12	19
Over 75,000	*	*	5	6	6
Total banks	151	166	152	164	132
Average	12,526.9	11,740.3	13,044.3	15,733.8	15.516.3
Median	16,675.1	19,917.3	17,531.5	21,720.2	23,428.2
				$\frac{Q7}{Q57 + Q58}$	

*No comparable data collected.

Table 37

Cash Letter Make-Up and Microfilming Labor Productivity

Checks per Man-Hour	Number of Banks 1979	1980	1981	1982	1983
Under 2,000	7	5	6	3	3
2,000 - 3,000	5	10	15	6	4
3,000 - 4,000	10	10	11	12	10
4,000 - 5,000	11	18	11	15	8
5,000 - 6,000	13	12	12	17	15
6,000 - 7,000	9	12	14	9	12
7,000 - 8,000	13	13	8	17	10
8,000 - 9,000	12	10	7	19	9
9,000 - 10,000	10	13	11	6	13
10,000 - 11,000	-	-	-	9	9
11,000 - 12,000	62	64	15	7	5
12,000 - 15,000	*	*	6	17	10
15,000 - 20,000	*	*	9	7	10
Over 20,000	*	*	14	11	5
Total banks	152	167	139	155	123
Average	6,261.0	6,323.3	6,214.8	6,802.8	6,923.1
Median	8,612.8	8,203.5	7,096.6	7,919.2	7,926.8
			$\frac{Q10 + Q11 + Q20 + Q21}{Q59 + Q60 + Q61 + Q62}$		

*No comparable data collected.

Table 38

Cash Letter Make-Up Labor Productivity

Checks per Man-Hour	All Banks 1979	1980	1981	1982	1983
Under 2,000	11	8	7	4	3
2,000 - 4,000	26	28	30	24	16
4,000 - 6,000	22	29	26	34	21
6,000 - 8,000	21	23	20	26	25
8,000 - 10,000	20	24	19	22	22
10,000 - 12,000	12	15	13	18	16
12,000 - 15,000	12	10	8	17	7
15,000 - 20,000	28	32	11	7	11
Over 20,000	*	*	13	14	12
Total banks	152	169	147	166	133
Average	5,556.6	5,768.3	5,438.6	6,532.0	7,172.8
Median	7,514.7	7,717.9	6,732.7	7,659.4	8,161.4
			$\frac{Q10 + Q11}{Q59 + Q60}$		

*No comparable data collected.

Table 39

Microfilming Labor Productivity

Checks per Man-Hour	All Banks 1979	1980	1981	1982	1983
Under 2,000	20	28	23	23	29
2,000 - 4,000	16	14	19	22	13
4,000 - 6,000	15	12	14	16	8
6,000 - 8,000	11	11	15	4	9
8,000 - 10,000	13	14	7	11	4
10,000 - 12,000	12	11	11	8	5
12,000 - 15,000	12	14	8	9	7
15,000 - 18,000	35	39	3	7	4
18,000 - 21,000	*	*	5	5	2
21,000 - 30,000	*	*	5	9	4
30,000 - 50,000	*	*	4	2	5
Over 50,000	*	*	5	5	2
Total banks	134	143	119	121	92
Average	12,609.1	7,933.1	8,970.5	9,441.7	6,226.3
Median	8,790.3	8,924.2	6,639.3	5,868.6	4,609.9
			$\frac{Q20 + Q21}{Q61 + Q62}$		

*No comparable data collected.

Table 40

On-Us Processing Labor Productivity

Checks per Man-Hour	Number of Banks 1982	1983
Under 400	11	4
400 - 500	5	1
500 - 600	7	1
600 - 700	8	5
700 - 800	9	3
800 - 900	9	11
900 - 1,000	7	8
1,000 - 1,250	13	17
1,250 - 1,500	12	12
1,500 - 1,750	7	10
1,750 - 2,000	6	5
2,000 - 3,000	12	12
3,000 - 4,000	8	5
4,000 - 5,000	4	2
5,000 - 10,000	8	12
10,000 - 15,000	5	5
15,000 - 20,000	5	1
20,000 - 25,000	2	1
Over 25,000	7	1
Total banks	145	116
Average	1,496.8	1,358.7
Median	1,310.9	1,399.0

$$\frac{Q12 + Q13 + Q14}{Q63 + Q64}$$

Table 41

Percent of On-Us Items Received
and
On-Us Processing Labor Productivity

Percent of On-Us Items Received*	Number of Banks 1982	Number of Banks 1983	Checks Processed per Man-Hour+ 1982	Checks Processed per Man-Hour+ 1983
Under 10%	15	14	810.7	936.0
10% - 20%	39	32	4,296.7	1,216.3
20% - 30%	28	19	2,534.6	1,280.1
30% - 40%	28	25	19,751.4	2,618.4
40% - 50%	16	7	51,937.9	1,753.4
50% - 60%	10	12	2,300.1	983.6
60% - 70%	7	4	1,396.6	970.7
Over 70%	2	3	43,318.0	3,685.8
Total banks	145	116		
Average productivity			1,496.8	1,358.7

*$\frac{Q12 + Q13 + Q14}{Q16} \times 100$

+Average within each percentage group. $\frac{Q12 + Q13 + Q14}{Q63 + Q64}$

Table 42

Bulk Filing Labor Productivity

Checks per Man-Hour	1981	1982	1983
Under 1,500	9	8	14
1,500 - 3,000	15	22	15
3,000 - 4,500	9	9	14
4,500 - 10,000	16	26	20
10,000 - 25,000	8	17	18
25,000 - 50,000	7	9	6
50,000 - 100,000	5	11	7
Over 100,000	3	6	2
Total banks	72	108	96
Average	4,423.5	5,958.9	3,914.9
Median	5,232.4	6,786.4	5,470.0
		$\frac{Q15}{Q65 + Q66}$	

Table 43

Exception and Return Item Processing

Items per Man-Hour	All Banks 1979	1980	1981	1982	1983
Under 10	18	17	13	15	9
10 - 15	16	19	24	23	17
15 - 20	19	27	21	22	12
20 - 25	16	23	18	19	22
25 - 30	11	20	13	20	16
30 - 35	20	16	13	9	15
35 - 40	11	8	13	13	6
40 - 45	12	10	3	9	5
45 - 50	5	5	3	6	7
50 - 100	7	13	10	16	15
Over 100	8	6	2	4	1
Total banks	143	164	133	156	125
Average	34.4	26.5	23.8	26.7	26.7
Median	27.8	23.8	21.5	24.8	26.0

$$\frac{Q18 + Q43 + Q44}{Q47 + Q48 + Q67 + Q68}$$

Table 44

Return Item Productivity

Items per Man-Hour	All Banks 1979	1980	1981	1982	1983
Under 15	12	15	14	15	10
15 - 20	5	4	8	7	4
20 - 25	12	14	10	13	10
25 - 30	8	17	10	8	10
30 - 35	13	10	13	5	6
35 - 40	7	8	13	12	9
40 - 45	11	9	5	6	9
45 - 50	6	8	6	8	9
50 - 65	45	52	19	29	20
65 - 80	26	29	15	14	13
80 - 100	*	*	13	11	9
100 - 120	*	*	1	10	6
120 - 200	*	*	7	6	7
Over 200	*	*	7	14	6
Total banks	145	166	141	158	128
Average	84.8	53.9	48.2	56.2	53.9
Median	48.7	47.4	43.6	53.5	49.3

$$\frac{Q18}{Q67 + Q68}$$

*No comparable data collected.

Table 45

Exception and Return Item Productivity
by Rate Discovered

Exception Item Rate per 100,000 Items Sent*	Number of Banks					Items Resolved per Man-Hour*				
	1979	1980	1981	1982	1983	1979	1980	1981	1982	1983
0 - 500	7	8	8	13	17	41.2	29.2	11.6	12.6	13.8
500 - 1,000	62	76	77	87	75	30.0	27.3	23.2	30.2	24.0
1,000 - 1,500	39	55	31	42	24	30.5	32.7	40.6	31.6	34.5
1,500 - 2,000	18	17	8	7	6	45.1	34.8	34.7	43.2	28.0
2,000 - 2,500	9	5	4	4	1	52.6	77.8	34.9	28.1	46.4
2,500 - 3,000	3	2	1	1	0	38.5	39.1	39.0	39.7	*
Over 3,000	5	0	4	1	2	37.5	*	29.5	66.5	74.5
Total banks	143	163	133	156	125					
Average						34.4	26.3	23.8	26.7	26.7
Median						27.8	23.7	21.5	24.7	26.0

$$*\frac{Q18 + Q43}{Q10} \times 100{,}000$$

$$+ \frac{Q18 + Q43 + Q44}{Q47 + Q48 + Q67 + Q68}$$

*No respondents.

Table 46

Exception Item Productivity

Items per Man-Hour	All Banks 1979	1980	1981	1982	1983
0- 2	54	55	41	54	38
2- 3	21	30	23	30	22
3- 4	18	18	21	16	18
4- 5	10	11	8	10	6
5-10	26	29	23	32	29
10-15	7	6	9	13	10
15-20	1	4	4	2	1
Over 20	13	14	12	8	7
Total banks	150	167	141	165	131
Average	2.9	3.1	3.1	2.8	2.9
Median	3.0	3.0	3.4	2.9	3.4

$$\frac{Q43 + Q44}{Q47 + Q48}$$

Table 47

Reject Processing Productivity by Area

All Banks

Area	1979	1980	1981	1982	1983
Boston	586.1	345.9	576.6	399.7	422.2
New York	439.5	375.6	443.5	488.9	209.3
Philadelphia	408.8	397.0	549.2	441.3	371.9
Pittsburgh	527.6	737.2	737.3	719.8	386.8
Washington, D.C.	335.3	383.7	394.8	445.9	330.7
Atlanta	290.1	554.6	465.7	383.8	307.5
Chicago	881.4	355.1	432.7	321.5	312.5
Cleveland	880.3	281.7	287.2	279.9	159.3
Detroit	461.0	369.7	476.4	720.9	451.1
Minneapolis/St. Paul	*	*	478.9	626.4	244.1
St. Louis	500.7	439.3	493.9	324.8	294.7
Dallas	298.6	477.6	209.6	447.6	293.7
Houston	475.5	610.1	304.7	477.5	216.2
Los Angeles	824.3	962.9	326.6	937.7	346.2
San Francisco	350.1	365.1	371.4	238.8	177.9
Denver	399.1	641.4	518.0	354.8	145.2
Total banks	68	110	101	123	102
Average	308.6	307.9	248.3	276.4	260.4
Median	395.1	357.2	342.8	346.9	345.9

*No respondents.

$\frac{Q99}{Q100}$

Table 48

Reject Processing Productivity

Checks per Man-Hour	Number of Banks 1979	1980	1981	1982	1983
Under 100	3	6	10	11	7
100 - 200	8	20	15	19	15
200 - 300	15	19	16	21	17
300 - 400	9	16	17	19	24
400 - 500	10	16	11	19	12
500 - 600	6	10	7	10	7
600 - 700	2	5	4	6	6
700 - 800	15	18	5	2	1
800 - 900	*	*	4	3	2
900 - 1,000	*	*	5	3	1
Over 1,000	*	*	7	10	10
Total banks	68	110	101	123	102
Average	308.6	307.9	248.3	276.4	260.4
Median	395.1	357.2	342.8	346.9	345.9
				Q99/Q100	

*No comparable data collected.

Table 49

Reject Rate After Reader/Sorter High-Speed
Reject Reentry by Area

Area	All Banks 1980	1981	1982	1983
Boston	0.1%	0.2%	0.2%	0.2%
New York	1.4	0.8	0.6	0.7
Philadelphia	0.7	0.9	0.8	0.7
Pittsburgh	1.6	*	1.1	0.9
Washington, D.C.	1.0	0.4	0.6	0.4
Atlanta	1.0	0.9	1.1	0.6
Chicago	1.0	0.9	0.5	0.3
Cleveland	0.8	1.0	0.5	0.4
Detroit	0.4	0.1	0.3	0.2
Minneapolis/St. Paul	*	1.0	0.6	0.7
St. Louis	0.7	0.6	0.7	0.2
Dallas	*	0.9	1.0	0.8
Houston	0.5	1.1	0.8	0.4
Los Angeles	0.3	0.5	0.5	0.9
San Francisco	0.4	0.4	0.5	0.4
Denver	1.0	0.5	0.3	0.4
Total banks	68	56	77	58
Average	0.8%	0.8%	0.6%	0.5%
Median	0.7%	0.7%	0.5%	0.4%

*No Respondents.

$\frac{Q31}{Q7}$ X 100

Table 50

Distribution of the Reject Rate After
High-Speed Reject Reentry

Area	All Banks 1980	1981	1982	1983
0% - 0.1%	11	14	23	20
0.1% - 0.3%	14	4	6	8
0.3% - 0.5%	5	6	10	7
0.5% - 0.8%	7	8	9	10
0.8% - 1.0%	10	4	9	8
1.0% - 1.5%	8	14	12	4
1.5% - 2.0%	6	5	5	1
2.0% - 2.5%	5	1	1	0
2.5% - 3.0%	2	0	2	0
Over 3.0%	0	0	0	0
Total banks	68	56	77	58
Average	0.8	0.8	0.6	0.5
Median	0.7	0.7	0.5	0.4

$$\frac{Q31}{Q7} \times 100$$

Table 51

Average Number of Rejects Reentered
from the First-Pass by Area

Area	1980	1981	1982	1983
Boston	35,326.8	23,381.9	13,117.1	32,736.8
New York	48,795.5	40,925.0	52,118.8	31,454.8
Philadelphia	18,906.7	28,702.6	18,804.6	20,966.8
Pittsburgh	24,792.0	26,102.5	22,980.0	19,500.0
Washington, D.C.	24,053.1	21,760.3	31,192.4	30,214.2
Atlanta	27,886.1	34,334.6	36,391.0	42,814.9
Chicago	30,996.0	39,406.6	45,454.3	28,455.7
Cleveland	37,801.1	28,955.5	33,944.3	47,714.2
Detroit	25,025.6	10,911.5	15,955.2	16,682.3
Minneapolis/St. Paul	*	6,069.0	5,529.0	14,715.3
St. Louis	18,523.3	21,710.3	25,321.8	28,792.0
Dallas	86,844.0	45,098.0	58,451.4	51,843.0
Houston	15,633.1	37,083.5	23,625.7	30,202.2
Los Angeles	59,173.9	36,448.3	101,598.8	56,373.8
San Francisco	59,767.4	94,456.1	50,269.5	67,097.3
Denver	29,711.0	31,318.3	38,351.0	22,727.8
Total banks	124	118	136	121

*No respondents.

Table 52

Average Number of Rejects Reentered
from Subsequent Passes by Area

Area	1980	1981	1982	1983
Boston	6,193.0	3,416.7	3,709.6	3,984.5
New York	1,202.4	262.8	2,153.9	681.5
Philadelphia	2,098.4	1,248.8	1,588.1	1,437.4
Pittsburgh	0.0	0.0	0.0	0.0
Washington, D.C.	0.0	885.6	400.3	809.9
Atlanta	1,634.8	5,156.6	1,628.0	869.9
Chicago	1,220.7	2,603.0	2,115.3	1,629.0
Cleveland	344.3	626.4	514.5	1,212.8
Detroit	0.0	0.0	0.0	0.0
Minneapolis/St. Paul	*	0.0	0.0	0.0
St. Louis	0.0	0.0	437.8	586.0
Dallas	0.0	0.0	172.0	0.0
Houston	5,722.5	545.3	55.3	0.0
Los Angeles	2,452.6	22.3	157.7	388.3
San Francisco	1,460.9	2,203.8	2,358.9	81.3
Denver	2,617.5	337.8	239.0	1,129.0
Total banks	124	118	135	121

*No respondents.

Table 53

Reject Reentry Productivity by Area

Area	1980	1981	1982	1983
Boston	267.3	544.7	211.1	357.7
New York	358.7	488.8	464.0	169.5
Philadelphia	303.5	315.9	312.8	302.9
Pittsburgh	219.8	320.6	474.9	189.3
Washington, D.C.	259.7	264.3	396.5	277.6
Atlanta	377.5	338.8	365.1	321.4
Chicago	729.4	322.9	368.1	297.5
Cleveland	285.2	214.0	259.4	201.2
Detroit	368.8	314.0	611.1	410.2
Minneapolis/St. Paul	*	337.2	396.4	464.0
St. Louis	207.6	251.0	344.4	245.3
Dallas	426.4	275.3	318.8	257.4
Houston	406.7	443.6	318.7	99.9
Los Angeles	426.0	471.6	557.9	345.6
San Francisco	353.3	440.2	391.2	187.1
Denver	355.4	366.7	277.1	108.8
Total banks	122	110	134	115
Average	195.3	270.9	255.9	227.3
Median	286.0	292.5	305.8	285.1

*No respondents.

$\frac{Q90}{Q91}$

Table 54

Reject Reentry Productivity

Check per Man-Hour	1980	1981	1982	1983
Under 100	15	16	18	10
100 - 200	33	18	20	30
200 - 300	14	23	27	20
300 - 400	21	15	26	17
400 - 500	14	17	18	9
500 - 600	9	7	4	10
600 - 700	4	3	6	3
700 - 800	12	6	5	6
800 - 900	*	1	2	3
900 - 1,000	*	1	2	4
Over 1,000	*	3	6	3
Total banks	122	110	134	115
Average	195.3	270.9	255.9	227.3
Median	286.0	292.5	305.8	285.1
		Q90/Q91		

*No comparable data collected.

Table 55

Automated Reject Processing

Use of Automated Processing	1980	1981	1982	1983
No	37%	39%	28%	21%
Yes, exclusively	18	19	18	21
Yes, in combination with manual methods	45	42	54	59
If no, do you plan to acquire automated reject processing?				
No	28%	11%	26%	38%
Yes	36	44	35	35
Undecided	36	45	39	27
If yes, automated reject processing is:				
On-line	58%	63%	69%	70%
Off-line	42	37	31	30
Do you repair all fields, including the account number?				
No	13%	16%	21%	14%
Yes	15	12	13	18
Yes, on selected banks	44	40	43	37
Yes, but only if operator intervention is not required	28	32	23	31

Table 56

Percent of Automated Reject Processing by Area

Area	Automated Reject Processing+					Manual Reject Processing≠				
	1979	1980	1981	1982	1983	1979	1980	1981	1982	1983
Boston	82.8	74.1	69.9	81.5	93.5	17.2	25.9	30.1	18.5	6.5
New York	60.9	43.0	58.8	75.1	85.1	39.1	57.0	41.2	24.9	14.9
Philadelphia	64.5	53.9	64.5	64.6	83.5	35.5	46.1	35.5	35.4	16.5
Pittsburgh	91.7	69.4	100.0	59.8	96.7	8.3	30.6	0.0	40.2	3.3
Washington, D.C.	82.9	44.3	56.1	63.2	83.7	17.1	55.7	43.9	36.8	16.3
Atlanta	63.0	61.2	78.4	74.2	71.1	37.0	38.8	21.6	25.8	28.9
Chicago	59.1	39.5	61 6	74.9	88.7	40.9	60.5	38.4	25.1	11.3
Cleveland	38.7	67.1	71.3	70.4	92.1	61.3	32.9	28.7	29.6	7.9
Detroit	90.1	60.0	50.0	56.8	49.7	9.9	40.0	50.0	43.2	50.3
Minneapolis/ St. Paul	*	*	58.8	78.7	83.9	*	*	41.2	21.3	16.1
St. Louis	69.9	62.4	56.9	69.1	73.2	30.1	37.6	43.1	30.9	26.8
Dallas	88.2	96.4	53.1	76.8	81.0	11.8	3.6	46.9	23.2	19.0
Houston	23.6	63.9	81.3	49.9	69.3	76.4	36.1	18.7	50.1	30.7
Los Angeles	84.9	82.6	84.8	77.6	81.5	15.1	17.4	15.2	22.4	18.5
San Francisco	69.0	59.7	67.6	52.8	72.9	31.0	40.3	32.4	47.2	27.1
Denver	53.9	47.8	51.4	89.3	79.8	46.1	52.2	48.6	10.7	20.2
Total banks	65	115	104	123	108	65	115	104	123	108
Average	66.3	68.6	70.1	77.1	81.0	33.7	31.4	29.9	22.9	19.0
Median	73.8	73.8	82.8	85.2	91.9	26.2	26.2	17.2	14.8	8.9

*No respondents.

$+\frac{Q97}{Q99} \times 100$; $\neq\frac{Q98}{Q99} \times 100$

Table 57

Distribution of the Automated Reject Processing Rate

Rate	Number of Banks 1979	1980	1981	1982	1983
0% - 10%	6	25	22	23	15
10% - 20%	3	3	0	0	1
20% - 30%	0	6	4	0	2
30% - 40%	3	4	0	0	2
40% - 50%	3	2	7	7	1
50% - 60%	7	6	3	2	5
60% - 70%	5	8	5	8	2
70% - 80%	11	10	9	6	11
80% - 90%	11	10	11	24	13
90% - 100%	6	13	14	23	29
100%	10	28	29	30	27
Total banks	65	115	104	123	108
Average	66.3	68.6	70.1	77.1	81.0
Median	73.8	73.8	82.8	85.2	91.9

$$\frac{Q97}{Q99} \times 100$$

Table 58

Percent of Incoming Encoded

Area	All Banks 1979	1980	1981	1982	1983
Boston	48.1%	52.1%	55.8%	55.7%	74.9%
New York	48.2	51.8	48.2	50.6	54.3
Philadelphia	56.9	44.6	48.5	54.2	63.9
Pittsburgh	48.7	39.6	50.2	50.9	59.6
Washington, D.C.	43.9	43.8	47.5	51.9	55.9
Atlanta	54.5	51.1	55.8	54.6	56.3
Chicago	70.2	69.4	73.2	74.7	82.8
Cleveland	52.9	55.8	50.7	53.4	52.6
Detroit	40.1	43.4	38.0	43.0	51.7
Minneapolis/St. Paul	*	*	54.9	73.6	80.0
St. Louis	66.5	69.7	69.6	72.0	74.5
Dallas	71.1	76.8	71.0	71.6	86.7
Houston	62.3	69.2	59.7	74.1	85.8
Los Angeles	33.8	36.0	31.9	38.3	40.1
San Francisco	40.2	46.8	44.3	50.5	77.5
Denver	67.3	66.9	58.3	64.1	63.5
Total banks	152	170	157	170	138
Average	50.7	57.0	56.5	63.3	65.1

*No respondents.

$$\frac{Q1 + Q2}{Q9} \times 100$$

Table 59

Percent of Supervisory Time to Clerical Man-Hours

Task	Average Supervisory Time 1979	1980	1981	1982	1983
Processing of exception items (Q48 ÷ Q47) X 100	12.4%	14.0%	14.4%	14.2%	14.2%
Data control (Q50 ÷ Q49) X 100	16.7%	12.8%	12.2%	13.5%	13.1%
Encoding (Q52 + Q56) ÷ (Q51 + Q55) X 100	6.3%	12.1%	8.9%	12.1%	11.1%
Check receiving (Q54 ÷ Q53) X 100	*	11.6%	12.6%	14.1%	12.9%
Reader/sorter (Q58 ÷ Q57) X 100	16.8%	15.2%	18.9%	22.8%	18.4%
Cash letter make-up (Q60 ÷ Q59) X 100	13.0%	13.6%	13.9%	14.6%	15.0%
Microfilm (Q62 ÷ Q61) X 100	10.0%	5.5%	10.8%	13.2%	6.6%
Paying and filing (Q64 ÷ Q63) X 100	4.9%	8.2%	8.4%	9.7%	7.5%
Bulk filing (Q66 ÷ Q65) X 100	*	10.8%	13.4%	14.3%	14.2%
Return items (Q68 ÷ Q67) X 100	23.5%	12.8%	11.6%	11.3%	13.2%
Total banks	151	158	106	134	136
Combined average	9.4%	11.7%	11.0%	12.8%	12.0%

*No comparable data collected.

$$\frac{Q48 + Q50 + Q52 + Q54 + Q56 + Q58 + Q60 + Q62 + Q64 + Q66 + Q68}{Q47 + Q49 + Q51 + Q53 + Q55 + Q57 + Q59 + Q61 + Q63 + Q65 + Q67} \times 100$$

Table 60

Percent of On-Us Items

Area	1979	1980	All Banks 1981#	1982	1983
Boston	50.4%	46.6%		42.3%	41.8%
New York	49.0	51.9		53.5	48.1
Philadelphia	51.3	51.1		48.3	37.6
Pittsburgh	60.8	58.2		62.0	49.5
Washington, D.C.	41.0	39.0		49.0	52.7
Atlanta	43.9	43.5		45.6	55.9
Chicago	28.9	29.5		27.2	24.5
Cleveland	43.4	47.1		49.1	44.3
Detroit	52.0	40.5		53.3	42.6
Minneapolis/St. Paul	*	*		26.9	35.1
St. Louis	22.5	23.5		23.1	24.9
Dallas	40.0	22.6		31.2	23.2
Houston	27.7	27.8		34.5	24.1
Los Angeles	57.6	67.5		52.3	50.2
San Francisco	48.4	58.9		65.4	57.1
Denver	36.1	44.0		41.1	34.8
Total banks	153	170		165	138
Average	44.5	44.4	44.6	47.7	45.3

*No respondents.

$$\frac{Q12 + Q13 + Q14 + Q15}{Q16} \times 100$$

#Data not available.

Table 61

Percent of Payable-Through Drafts

Area	All Banks 1979	1980	1981#	1982	1983
Boston	9.6%	8.5%		9.1%	23.1%
New York	8.4	3.2		1.1	5.3
Philadelphia	1.6	1.7		1.1	1.0
Pittsburgh	0.2	0.3		0.3	0.4
Washington, D.C.	2.8	14.9		2.5	4.8
Atlanta	1.4	1.3		2.3	2.0
Chicago	5.8	7.2		5.5	4.1
Cleveland	2.1	1.6		9.7	0.9
Detroit	8.1	0.5		0.3	0.6
Minneapolis/St. Paul	*	*		8.2	5.9
St. Louis	6.3	5.3		14.3	4.9
Dallas	2.6	2.4		2.0	2.4
Houston	1.6	2.4		1.6	0.7
Los Angeles	0.9	2.6		1.4	1.2
San Francisco	19.0	2.4		0.7	0.6
Denver	7.6	4.8		8.1	16.2
Total banks	153	169		164	138
Average	3.8	5.2		2.4	3.5

*No respondents.

$$\frac{Q14}{Q12 + Q13 + Q14 + Q15} \times 100$$

#Data not available.

Table 62
Forms of Check Truncation

Area	Truncation at the Bank of First Deposit			Check Safekeeping at Payor Bank			Cooperative Check Truncation			Electronic Check Presentment			Data Processing Services		
	1981	1982	1983	1981	1982	1983	1981	1982	1983	1981	1982	1983	1981	1982	1983
Boston	0	0	0	0	1	1	0	1	0	0	1	0	*	0	0
New York	0	0	3	5	4	4	2	3	3	0	1	1	*	0	1
Philadelphia	0	0	1	5	5	4	0	0	0	0	1	0	*	1	0
Pittsburgh	0	0	0	1	1	0	0	0	0	1	2	2	*	0	1
Washington, D.C.	0	0	0	2	2	3	0	0	0	1	1	0	*	1	2
Atlanta	0	0	2	3	6	3	0	1	0	1	0	0	*	0	1
Chicago	0	0	0	3	4	2	1	2	2	2	3	2	*	0	0
Cleveland	0	0	0	1	3	2	0	1	1	0	1	1	*	0	1
Detroit	0	0	0	0	1	2	0	0	0	0	0	0	*	1	1
Minneapolis/St. Paul	0	0	0	3	1	2	0	0	0	0	0	0	*	0	1
St. Louis	0	0	0	2	0	1	0	1	1	0	0	0	*	0	0
Dallas	0	0	0	1	1	2	0	0	0	1	1	1	*	0	0
Houston	0	0	0	0	1	1	0	0	0	0	0	0	*	0	0
Los Angeles	0	0	1	2	3	2	1	1	1	0	0	1	*	0	0
San Francisco	0	0	0	2	3	4	0	0	0	1	1	2	*	0	0
Denver	0	0	1	2	2	3	0	0	0	0	0	1		2	2
Total banks	0	0	0	32	38	32	4	10	8	7	12	11		6	10
Total items (1983)		-			3,255,324			1,682			319,164			7,864,838	
Average (1983)		-			101,728.9			210.3			29,014.9			736,483.8	
Total banks (1983)		-			32			8			11			10	
Total dollars (1983)		-			$3,087,877,036			$289,644			$265,174,664			$734,324,635	
Average (1983)		-			96,496,156.0			36,205.5			24,106,787.6			73,432,463.5	
Total items (1982)		-			4,915,873			2,258			53,168			1,475,956	
Average (1982)		-			129,365.1			225.8			4,430.7			245,992.7	
Total banks (1982)		0			30			9			12			5	
Total dollars (1982)		-			$1,906,901,021			$484,289			$184,478,494			$61,109,149	
Average (1982)		-			63,563,367.4			53,810			15,373,207.8			12,221,829.8	
Total items (1981)		-			2,321,230			494			124,430			*	
Average (1981)		-			72,538.4			123.5			17,757.7			*	
Total banks (1981)		0			26			2			7			*	
Total dollars (1981)		-			$1,396,591,550			$33,859			$159,049,531			*	
Average (1981)		-			53,715,059.6			16,929.5			22,721,361.6			*	

*No comparable data collected.

The following comments were submitted by bankers who participated in the 1983 BAI survey. The purpose of this section is to provide bankers with an overview of the current environment in check processing operations. Therefore, references to specific organizations, vendors, or equipment were omitted; however, comments concerning working relationships with Federal Reserve Banks and other financial institutions that are pertinent to the overall functioning of the check collection system have been included to promote the cooperative efforts for improvement by all participants.

Personnel

"Turnover increased due to the current economic climate."

"Turnover has been fairly stable"

"Turnover has been low due to economic conditions"

"Regular salary staff paid for 40 hours was converted to full-time hourly staff (when staff turned over). We had substantial savings in salaries, paying staff only for the hours they actually worked."

"Pay incentive plan has generally been accepted by operators."

"We are investigating the use of outside training support to enhance the training of proof and encoding personnel."

"During 1983, a formal trainer checklist was implemented to closely monitor the progress of new employees."

"Increased emphasis has been placed on cross training to achieve better coverage and more efficient production."

"Quality circles have increased from one circle in 1982 to six circles in 1983."

Transportation

"Transportation costs have increased significantly. We are sending to FRB cities instead of consolidating to the local Fed in order to improve our on time-delivery and reduce float charges."

"Increased the number of direct sends by 100%."

"Outgoing transit work shifted more to private couriers at the Fed's expense."

"We are constantly looking for new ways to improve availability or reduce Fed pricing costs."

"Most of our cash letters use the Fed ITS delivery system with good results."

"Completely eliminated the need for helicopter deliveries by revised truck schedules."

"We are using our own drivers to pick up and deliver work instead of an outside courier."

"Transportation has become more competitive. We have reduced in-house couriers and increased contract couriers due to cost savings."

"Fewer commercial flights are creating a more competitive industry, thus increasing costs due to more usage of charters."

"Competition has heightened to the point that cut-throat tactics (law suits, counter suits, and pricing games) by couriers have become prevalent. Bank confidence in couriers has decreased because of marginally ethical practices. Costs, however, have gone down."

"Transportation has become more expensive."

"Transportation continues to be a problem for us."

Rejects

"Our reject rate was 0.88% the lowest in the bank's history."

"Our aim is to keep the reject rate under 1%."

"Our reject rate is 2.77% and has remained the same."

"Our reject rate has been maintained at 1.5% during the year."

"Our rejects rate increased because some large corporate customers are pre-encoding their own work."

"Our reject rate decreased due to pre-qualification, quality control, comprehensive operator-based maintenance on reader/sorter equipment, and quality checks during encoding and workflow blocking operations."

"Rejects have tripled due to other banks' smudged encoding."

"We have had a significant reduction in reject rates of correspondent cash letter deposits by simply monitoring each run and more frequently cleaning machines or calling IBM customer engineers to repair the machines when reject rates are higher than standard."

"We are especially concerned about the effect of rejects on the quality of our cash management reporting services."

"The reject rate has decreased by obtaining better quality paper and by contacting insurance companies for correctly printing checks."

"Rejects are down because of new reader/sorter equipment with greater read capability."

"Clearing time on reject dollars has been reduced from 2.28 days to 1.46 days."

"Rejects are declining but require constant management."

"We have initiated revised reject handling procedures to reduce Fed pricing costs."

"We process all low-speed items the same day. Our bank has reported zero holdover dollars on transit items."

"We used to ship transit rejects as low-speed items. Now we put them in carrier documents, encode the transit routing number and dollar amount, process them through the reade/-sorter, and handle most of them as transit high-speed items."

"Full-field encoding of rejects should be mandatory."

Outstanding Exception Items

"There is a marked increase in the number of outstanding items as well as an upward trend in volume as well."

"Our exception items level has remained the same."

"The total number of exceptions is at the lowest level ever."

"Our large dollar differences are being resolved more quickly."

"We experienced a decrease in exception items caused by the installation of an adjustment package and better control functions."

"Aged items six months and older declined significantly due to better follow-up methods by management and staff."

"Our procedure for charge-off has increased to 90 days from 45 days."

"The response on our correspondence with other banks is not satisfactory. Some banks do not seem to read our letters and return our correspondence asking for inappropriate information."

"Slow resolution of adjustments, especially those handled by money center banks, continues to be a problem."

"Exception item problems have twice caused us to switch upstream correspondent relationships. We do not deal with a bank that ignores exception items in its favor."

"Documentation required to prove accountability is becoming increasingly more difficult and costly."

Returns and Adjustments

"Both returns and adjustments have increased due to the economy and the growth of our bank."

"A substantial increase is evident in both number and dollar volume."

"We are experiencing an increase in photocopy requests due to check safekeeping."

"The change from correspondent banks to the Fed has been smooth, with no measurable increase in adjustments."

"The returns are basically the same as last year."

"Adjustments have decreased for the first time since 1980."

"Tighter controls have reduced the number of adjustments."

"Costs have increased significantly."

"We find that a large portion of adjustments, photocopies in particular, have already been paid and the difference is being held by a third bank."

"We believe the industry should enforce the endorsement standard. In spite of good efforts by BAI and others, everyone seems to be doing their own thing."

"Information on returns from the Fed has shown improvement."

"Clearing house membership has increased due to the Fed policy on returns and adjustments."

"Our return item costs are still high, and we are looking to the Dallas pilot to aid in reducing these costs."

"We believe the endorsement standard from ANSI should be universally adopted, and we have pressured our local Fed to handle all returns once the success of the Dallas pilot is proven."

Automated Reject Processing

"On-line reject processing has increased productivity."

"We have added OCR read capabilities to our on-line reject processing equipment and have realized a significant increase in throughput and a reduction in errors."

"There is a possibility that we could consider automated reject processing in the future, and it is among our ongoing projects for 1984."

"Current strip machine has been plagued with problems."

"Not looked at."

"Upgrade of system was started in 1983 and is scheduled for completion in the first quarter of 1984."

"The reject equipment is continuing to increase our availability and lower Fed charges. However, these items are still a problem for the receiving bank, because they are not fully encoded. This problem could be solved if standards for reject repair were established."

"We installed equipment and it caused a tremendous increase in adjustments to due system problems."

"Complete automation does not exist. The methods ~~that~~ are available offer some improvement in the reduction of labor costs, but the equipment is expensive."

Equipment and Systems Problem

"Reader/sorters showed continued improvement. Total downtime was 3.1% in 1983."

"We have experienced a 95% availability of systems and equipment, including preventive maintenance as unavailable."

"We upgraded our reader/sorters and experienced problems with the reliability of the endorser unit."

"As in any industry, equipment and system problems do exist; however, with sufficient maintenance, these problems are minimal."

"We have continually found that scarce system resources make it impossible to incorporate the many needed improvements to our check system."

"We experienced more system problems due to mergers and branch banking."

"We have installed dual processors, which makes downtime minimal."

"We are upgrading our software for check processing."

"We are reducing our readersorter configuration."

"The utilization of equipment has improved due to modification of our sorting packages."

"We replaced our multipocket proof machines with single-pocket machines."

"Continued monitoring with our vendors has reduced equipment and system problems."

"We have had very good results with equipment, including the installation of new equipment."

Security

"We have now been in our new location for a little over a year and there has been an improvement in security measures."

"We are in the process of having back-up a installation in case of emergencies."

"Security is better because of the design of the new operations center."

"The security of items has improved due to recent remodeling of the area and increasing vault storage."

"Continued tight security measures remain in effect. Our system operates on a 'need to access' basis only using key cards and combination locks."

"We have installed a card-entry system in the operations area."

Regulatory Impacts

"The world has turned upside down. However, the profitable opportunities for the most aggressive banks abound."

"The Fed continues to be a formidible competitor using its regulatory power to enhance its business position."

"The Fed has made several unilateral decisions, procedural changes, and pricing moves that have been costly to us and many other banks. We continually see Fed changes due to a lack of understanding as to how a commercial bank operates and what motivates collection decisions."

"Inconsistent Fed policies require significant management time to analyze and implement necessary procedures."

"With the implementation of 'noon presentment' and Fed pricing, the analysis for evaluating check clearing alternatives has become significantly more complex. This in turn has caused staff increases."

"As a result of 'noon presentment' our ability to effectively provide controlled disbursement services for corporate accounts has been hampered, since our checks paid figure is not available until 1:00 p.m."

"We have a suffered negatively at this time from 'noon presentment'; however we are pursuing a more price-effective alternative check clearing source."

"Fed pricing has caused changes in couriers used. We are evaulating the impact of high-dollar group sort."

"Fed pricing forced us to make more direct sends, thus providing better control of missed cash letters and float recovery."

"Fed pricing and float charges have forced us to re-evaluate our sending and routing patterns and the number of commingled relationships has increased."

"As a result of TEFRA, we had to create additional accounts and processing efforts."

"A great deal of time and effort was spent on TEFRA and the uncertain outcome of regulations presented problems to us."

"Pending legislation on delayed availability will undoubtedly increase the cost of return items."

Check Truncation

"Safekeeping on personal accounts conversion is completed. We have started marketing business accounts."

"Our intent is to increase marketing efforts in this area."

"As a keeper bank, both volume and dollars are stable, with a predictable fluctuation at certain periods of the year."

"Approximately 43% of our daily on-us items are under safekeeping."

"Volume up is 10%"

"We started check truncation on a small scale and have had no problems."

"As a result of on-line teller terminals, we began semi-truncation of Mastercard payments, official check registers, and installment loan payments. Items are truncated at the branch level to avoid paper handling, and the items are captured electronically."